

A P P E A R A N C E S

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VALERIE SQUIER

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1 P R O C E E D I N G S

2 September 25, 2009

3 (Open court, Counsel and Defendant
4 present, no jury)

5 THE COURT: Okay. Good morning,
6 everybody. We'll get on the record.

7 Ms. Kirkwood, you may call your next
8 witness.

9 MS. KIRKWOOD: Yes. Dr. Squier.

10 THE COURT: Would you raise your right
11 hand to be sworn, please.

12 (Witness sworn)

13 THE COURT: Okay. Have a seat, please.

14 THE WITNESS: Thank you.

15 THE COURT: Welcome to Amarillo, Texas.

16 THE WITNESS: Thank you very much.

17 THE COURT: You may proceed.

18 MS. KIRKWOOD: We're back to
19 neuropathology today.

20 WANEY MARIAN VALERIE SQUIER,
21 having been first duly sworn, testified as follows:

22 DIRECT EXAMINATION

23 BY MS. KIRKWOOD:

24 Q. I'd like you to state your name for the
25 record.

1 A. I'm Dr. Waney Marian Valerie Squier.

2 Q. And could you spell the last name?

3 A. S-Q-U-I-E-R.

4 Q. And what is your profession?

5 A. I'm a neuropathologist.

6 Q. And where do you work?

7 A. I work in the John Radcliffe Hospital in
8 Oxford where I have a contract to do diagnostic
9 neuropathology for the national health service, and I
10 have an honorary contract with the University of Oxford
11 which also allows me to do my diagnostic work and to do
12 teaching and research.

13 Q. And that research is done at the University of
14 Oxford?

15 A. It is, yes.

16 Q. Do you belong to any professional societies?

17 A. I'm a member of the British Neuropathological
18 Society, a member of the French Neuropathological
19 Society and a member of the British Pediatric
20 Neurologist Association.

21 Q. And could you give us a brief description of
22 your education?

23 A. Following leaving school I was educated in the
24 University of Leeds where I obtained a bachelor of
25 science degree in anatomy, and I then got my medical

1 qualifications which is bachelor of medicine, bachelor
2 of science, MB ChB, bachelor of surgery, I'm sorry, MB
3 ChB, and then I became a member of the Royal College of
4 Physicians by examination in pediatrics. And some ten
5 years ago I was elected to fellowship with the Royal
6 College of Physicians and I obtained my fellowship at
7 the Royal College of Pathologists in -- I think it's
8 1991.

9 Q. Thank you. And have you published any
10 articles or -- or created any books in the area of
11 child -- sorry -- in the area of pediatric head trauma
12 or -- or head injury of any type?

13 A. I have published a -- I contributed to a book
14 on muscle disease and I've contributed to a book on
15 acquired brain injury in infants and young children,
16 brain injury of all sorts, not just traumatic, and I've
17 written about 110 articles in the peer reviewed
18 literature on all aspects of my work in neuropathology,
19 not just pediatrics. But in the last 25 years I've done
20 work specifically on the effects of oxygen deprivation
21 on the baby brain, on correlation of imaging with the
22 pathology in premature infants, on courses of epilepsy
23 and courses of cerebral palsy.

24 Q. And do you lecture on these subjects?

25 A. I do, yes.

1 Q. And where do you lecture?

2 A. This year I've lectured in England at three or
3 four places. I've lectured in Brussels, and in Denver
4 and in Jackson Hole and I'm going to Guatemala and
5 Amsterdam in the next six weeks to teach on courses and
6 to lecture.

7 Q. And is this entirely in the field of
8 pediatrics at this point -- or pediatric neuropathology?

9 A. It's all pediatric neuropathology; the whole
10 spectrum of pediatric neuropathology.

11 Q. And what does neuropathology cover?

12 A. It covers the study of the pathology, what can
13 go wrong of the brain, spinal cord, and in my case I
14 also look at the muscle. And it's attempt to make
15 diagnoses of the diseases of the central nervous system.

16 Q. In the course of your work, how many brains do
17 you look at?

18 A. I probably look at about 100 brains each year.

19 Q. And have you testified before?

20 A. I have, yes.

21 Q. And for whom do you testify?

22 A. My evidence is for the court. I've given
23 evidence in the United Kingdom in England and in
24 Scotland which has a different legal system. And I've
25 this year also given evidence in Sweden. I'm -- I

1 testify, as I say, for the court on cases which are
2 sometimes brought to me by the police and sometimes by a
3 lawyer who is seeking an opinion for defense.

4 Q. And are you being paid for your work on this
5 case?

6 A. No, I'm not.

7 MS. KIRKWOOD: I'd like to qualify
8 Dr. Waney Squier as an expert. Any objection?

9 MR. MURPHY: No.

10 THE COURT: Okay. Doctor, could I ask
11 you to reposition the mike a little closer to you?

12 THE WITNESS: Yes, I'm sorry.

13 THE COURT: Thank you.

14 Q. (BY MS. KIRKWOOD) Have you reviewed the
15 records in this case?

16 A. I have, yes.

17 Q. And did you focus on particular records?

18 A. Yes. I started looking at this case many
19 years ago and was sent a variety of pieces of paper of
20 information and summaries, but I was sitting in court
21 yesterday, and it's quite clear that the -- some of the
22 information may, in fact, be changing. So I have
23 focused on all that information which I think is
24 contemporaneous with this baby's collapse, and which was
25 recorded at the time of her collapse and her admission

1 to hospital. And the records of her first -- well, her
2 period of time in hospital, which was only a very short
3 period of time.

4 Q. Thank you.

5 MS. KIRKWOOD: I'm having a little bit of
6 difficult hearing too. Are you still having difficulty
7 hearing the witness?

8 THE COURT: We'll get the bailiff to
9 adjust that.

10 Q. (BY MS. KIRKWOOD) I think you had just said
11 that you had -- you had focused on particular records in
12 view of the fact that you had learned yesterday that
13 some of the witness testimony would be changing. Could
14 you tell us which records you focused on and why?

15 A. Well, I could look at the records because it's
16 an important part of making a diagnosis. I'm not a
17 pediatrician, but I need to look at the clinical notes
18 to put a whole picture together to interpret the
19 neuropathology. And I -- I believe the clinical history
20 is extremely important. It's something that's being
21 taught in medicine since the very first days of
22 medicine, that the clinical history is the cornerstone
23 of diagnosis, so it's important to take into
24 consideration what has happened. And the first document
25 that I thought did have some relevance in this case was

1 the document of the doctor who saw the baby just shortly
2 before she collapsed, and that was a visit she had to
3 the doctor's office on the 12th of October.

4 And there were a few things in this
5 document which I thought were relevant. Firstly, that
6 this baby was five and a half months old. She'd missed
7 a four-month checkup. And she was behind on her
8 immunizations. And there was a concern about her
9 growth. She was very small. She was on a very low
10 growth percentile, and she was actually not growing as
11 fast as was expected and so the mother was given some
12 advice about that.

13 It's noted that she does sweat a lot. And
14 the doctor examined this baby and felt her head and said
15 the fontanel, which is the soft spot of the front of the
16 head here, was soft and it was open. And that means
17 there's no -- nothing obvious going on inside the head.
18 There's no fluid collecting, nothing that worried the --
19 I believe it was the pediatrician at that time.

20 She also examined her and said she had
21 normal tone, strength, gait, coordination. So all her
22 muscles were functioning normally, so at that time the
23 doctor thought the neurological system, the brain and
24 the muscles were working appropriately.

25 And she noticed that there was candida, a

1 diaper dermatitis. So that sets the first scene for
2 this baby just a month before she collapsed. The next
3 piece of evidence I thought would -- one might assume is
4 a good contemporaneous document was the -- the
5 transcript of the 911 call. And I have to admit that
6 I've looked at probably up to 150 cases of infant deaths
7 in suspicious circumstances, and this is quite the most
8 remarkable document I've seen in my whole time of
9 looking at these cases, and that's because it gives so
10 much clinical information, so much more than one
11 normally gets. And you may like to go through it with
12 me, but the very first thing that I can read is, oh,
13 what's going on? And Mr. Lopez says we're babysitting
14 this little girl, she was bitten by a spider not too
15 long ago, and she's been acting funny ever since. He
16 then says she stopped breathing. He then offers, after
17 several interchanges, that her little heart is going 100
18 miles an hour. And then he says she's got blood coming
19 out of her mouth. And he goes on to say how he's trying
20 to suction that out. Then he repeats spider bites on
21 two more occasions. And then he goes on, mentions them
22 yet again and he's trying to get the blood out of her
23 mouth, and then he says, it looks like she was peeing
24 blood last night.

25 So in that transcript we have some

1 information about her heart being -- going far too fast.
2 But what he's -- and it's obvious he's concentrating --
3 worried about these spider bites. That's really in the
4 top of his mind, and then he says she's got blood coming
5 from her mouth. I've never ever seen that in the
6 transcript of a 911 call before. And she was passing
7 blood in her urine the night before, which again is a
8 remarkably unusual thing to appear at that point in the
9 clinical history.

10 Following that I looked at the records
11 that were available from the hospital. And in here
12 the -- there is, I -- it's not very good page
13 documentation here, but on the 28th of October, Dr. Levy
14 examined this baby between 1128 and 1800, and he's
15 written what is, I assume, a summary of all the things
16 that were going on when he didn't have time to write
17 them down, so he wrote his record of what was happening
18 at that point and there was several points in here which
19 did strike me. First of all, he said the patient
20 arrived in full code, which means with her heart
21 stopped, for 30 minutes. That's an incredibly long
22 period of time. No brain can survive being deprived of
23 full oxygen and blood supply for 30 minutes. So that
24 would have immediately caused some brain damage.

25 The next thing he says is infant had a

1 cough, congestion for three or four days. She has been
2 feeding poorly this morning. She felt warm this
3 morning. And she was reported to have dark, sticky
4 stools since last night.

5 Then he goes on to say that his
6 examination showed that she had extensive bilateral
7 retinal hemorrhages. He doesn't examine the soft spot,
8 so we don't know if the brain was swelling or if there
9 was pressure inside the head, because there's no record
10 of examining the soft spot or measuring the head
11 circumference, two very simple and very helpful
12 investigations when one's trying to look for brain
13 pathology.

14 He said the lungs were clear and there
15 was -- seems to have been good air entry. He notices
16 bruises of her face, her right eyelid, chest, bilateral
17 anterior eye, neck region and arms of varying ages. He
18 then puts in volume expansion, fluids -- he then says
19 she has profound metabolic acidosis, which is due to the
20 cardiac arrest, and then he wants to correct the DIC,
21 the diffuse intravascular coagulopathy. So he's already
22 aware that within that short time of arriving, a
23 coagulopathy is clearly in evidence.

24 And what I can't see here is that despite
25 the history in the 911, there's no evidence that he had

1 actually taken blood to look for anything like the
2 spider venom or that the police had been to the home to
3 see if there was any evidence of spiders in the house to
4 see if that story could have been corroborated. So it
5 was presumably something that was not looked at in the
6 heat of trying to save this baby's life.

7 The next part of this document which drew
8 my attention was the nursing notes, which are the back
9 of this -- this wad of papers, and there's a note which
10 is -- the 28th of October at 1215, and I think these are
11 all the nursing notes here in handwriting.

12 At 1220 it's noted that she was given
13 fluids and bicarbonate. At 1240 she was catheterized
14 and there was no urine in her bladder, but it also says,
15 fresh bleeding noted from the vagina and rectal area.
16 And then at 1345, fresh -- frank red blood was suctioned
17 from the endotracheal tube. So there's fresh blood
18 coming out of the lungs or the airway at some point. So
19 that was at 1345. 1349, red frothy blood from ETT.
20 1427, large amount, fresh, red frothy blood from ETT.
21 At 5:00, bloody froth noted from endotracheal tube, and
22 then going on to 7:13, blood coming from endotracheal
23 tube due to pulmonary edema. And Dr. Sunderland, who's
24 a clinician and I'm not, he discussed this and he said
25 obviously one would expect pulmonary edema, but that's

1 usually described as pink frothy fluid. And I was
2 struck by the fact this had changed over the period of
3 time from the first moments after admission when it was
4 described as frank blood, to later on, this is
5 blood-stained fluid and frothy fluid when the pulmonary
6 edema is there. So this is certainly more bleeding from
7 the lungs than one would expect in a normal -- a
8 normal -- in a baby who's just collapsed from some sort
9 of cardiac arrest and has been hypoxic.

10 The other document that came with that is
11 a body diagram that was available from the clinical
12 notes where multiple bruises are described. They're all
13 described as being brown except for a purple bruise on
14 the eyelid and a purple and red bruise down here in the
15 left leg. So multiple brown bruises were described
16 clinically.

17 Then -- and this is -- there were clearly
18 the lab results, which are not really my area of
19 expertise. Dr. Sunderland discussed this yesterday, but
20 even I can look at them and see that in this column it
21 says high or low, and there was a large number of
22 results here that are not in the normal range. She's
23 got a very abnormal blood chemistry results and
24 hemoglobin, but that's for other people, not for me.

25 Then on the 28th of October, there was a

1 CT brain scan. Now, this is where I -- I'm interested,
2 because it's very relevant to looking at the brain to
3 understand what happens inside the brain, and as we
4 know, this baby spent some 60 hours on a ventilator, so
5 this is the best record of what's going on in the brain
6 and inside the head at the time of admission. This is
7 the closest look we get at the brain. And this scan
8 describes subarachnoid bleeding in various parts of the
9 brain. There appears to be cerebral edema. That means
10 the brain is swelling. And it says there's loss of the
11 gray/white matter differentiation.

12 Now, the brain is -- I'm sure you do know,
13 or you will know shortly, is composed of a layer of
14 nerve cells on the surface which is the cortex and the
15 white matter underneath it where the nerve fibers are to
16 be found. And normally on a scan you can see the
17 difference of signal in those two parts of the brain.
18 When it starts to disappear, that's an indication the
19 brain is undergoing damage due to lack of blood and
20 oxygen supply, hypoxic ischemic injury. So the
21 subarachnoid bleeding, brain swelling and this hint that
22 there's some hypoxic ischemic injury.

23 Then it says no focal intraparenchymal
24 bleed can be demonstrated at this time. That means
25 there's no bleeding, no focus, no collection of blood in

1 the parenchyma, in the tissue of the brain. So on this
2 scan there is no evidence that there has been any
3 primary brain tissue at this point in time. No bruises,
4 no contusions, no focal intraparenchymal bleed. And the
5 impression is cerebral edema, brain swelling, is
6 suggested profusely, and there's also diffuse blood in
7 the subarachnoid spaces. So two things that aren't here
8 are contusions or subdural bleeding. That wasn't
9 identified on the first brain scan.

10 The next document that I read, obviously
11 with considerable interest, is the post mortem report,
12 because that's very relevant to my area of interest.
13 The brain weighed 790 grams. That's probably at least
14 100 grams bigger than it should be for a baby of this
15 age, reflecting brain swelling. The external
16 examination of the baby reflected that there were no
17 injuries to the frenulum, this little piece of tissue
18 inside the lip, which is often regarded as evidence of
19 abusive injury in babies. There were multiple bruises
20 described over the body. I won't describe them all, but
21 they're mostly described as being purple, and there is
22 occasional abrasions as well. And when the scalp was
23 reflected and examined, in other words, the scalp is cut
24 and lifted back to see if all of these bruises are
25 actually just superficial skin bruises or if they go

1 into the deep tissues. And the only one that is
2 described as being associated with subscalpular
3 hemorrhage is the posterior occipital region of the head
4 in the midline. So that's in the middle at the back of
5 the head. And this is something that we see very often
6 in babies who are nursed on a ventilator. They're lying
7 still with tubes in on a mattress, and because the scalp
8 is a very soft loose tissue, if there's any bleeding at
9 all or any fluid, it tends to drain to the back of the
10 brain or the back of the head. And this part of the
11 scalp at the back where it's in contact with the
12 mattress does tend to get swollen and there's often a
13 little pooling of blood in those tissues. So that's
14 something which could well be secondary to her period of
15 ventilation.

16 When the head was opened, there's no
17 evidence of any fractures of the skull, but there's a
18 right-sided subdural hemorrhage consisting of liquid
19 blood. And the brain was then saved for further
20 examination in the department of neuropathology.

21 Several other things that weren't
22 described is the state of the dura was not described.
23 The state of the dural sinuses were not described and
24 the bridging veins were not described. We're going to
25 have to -- at some point, to get into some anatomy. I

1 don't know if this is the point where I should put up
2 one of those pictures and explain what all those
3 structures are, because I think it might help our
4 understanding of the pathology.

5 THE WITNESS: Would you like me to do
6 that?

7 THE COURT: Yes.

8 MS. KIRKWOOD: Yes, I would.

9 A. You have two rather badly colored pictures.

10 Q. (BY MS. KIRKWOOD) These are going to be --
11 now, which one would you like to use?

12 A. The one in your right hand, please.

13 Q. This one. Okay.

14 A. I don't know how well they're going to
15 project. I apologize I couldn't put my computer on. Do
16 you have a pointer?

17 MS. KIRKWOOD: Excuse me. May I
18 approach?

19 THE COURT: Sure.

20 MR. MURPHY: Your Honor, it would help me
21 and I -- I -- did you make me a copy?

22 MS. KIRKWOOD: I did. I did give them to
23 you. Where did they go?

24 MR. MURPHY: I've never been handed
25 anything. I would just like to have it. It would help

1 me here --

2 MS. KIRKWOOD: Definitely.

3 MR. MURPHY: -- so I wouldn't have to
4 look at the screen.

5 MS. KIRKWOOD: There you go.

6 MR. MURPHY: Thank you.

7 A. This is just a diagram taken from a textbook
8 of anatomy, and it shows the brain and the spinal cord
9 as if they were cut this way. So if one took a cut
10 right the way through the nose in the midline, we're
11 looking at one side. So here is the front and here is
12 the back. This is the cerebral hemisphere. That's the
13 bulk of the brain there. This is what we call the
14 cerebellum, which is the small part of the brain at the
15 back, and the bony skull is surrounding the brain here
16 and here. And this is where the head joins the neck.
17 So the spinal cord is here and the vertebral column is
18 here. So this is the back of the brain just there where
19 you -- when you move your head forward and back, it's
20 hinging at this point.

21 And there's a ring of bone here where -- a
22 hole in the back of the skull where the spinal cord can
23 go down into the spine.

24 Now, this is an area we call the pons, and
25 the brain stem, this is the cerebellum and this is the

1 cerebral hemisphere. Starting perhaps with the fluid
2 that flows around the brain, this fluid called cerebral
3 spinal fluid that bathes the brain all the time. This
4 is produced here in what's called the choroid plexus.
5 So this is a membrane that's very thin, has lots and
6 lots of blood vessels, and all the time in normal life
7 this is producing fluid which goes into cavities in each
8 of the cerebral hemispheres, and then it passes out
9 through here and it goes up over the surface of the
10 brain, and it goes through here into this little space,
11 down this little track here, out here and down through
12 the spinal cord. Most of this fluid which circulates
13 all the time -- we're continually turning over this
14 fluid, because it's very important in maintaining the
15 brain's function, and it's drained out through nerve
16 roots down in the spinal cord.

17 But this is important, because we've heard
18 about intraventricular hemorrhage, and I'll come back to
19 that, but this fluid is bathing the brain up here.

20 Now, the blood supply to the brain, all of
21 the blood comes into the brain from big arteries and it
22 passes through into what we call veins. These are the
23 vessels that link up and they take the blood from the
24 brain into this thing which is called a dural sinus.
25 And this is within the dura, and it runs from front to

1 back right over the top of the head. So if we cut the
2 brain this way, we would see this big channel. And
3 these big dural channels take the blood back here and
4 back into veins and back to the heart.

5 And we can see this is a vein taking blood
6 from the brain into that sinus and another one here, and
7 there are about eight of these brain -- these veins
8 which are called bridging veins, which are responsible
9 for draining blood from the brain into the sinus.

10 Now, as we're sitting here talking, we're
11 all passing about a quarter of our blood volume through
12 our brain every minute. And in the baby, it's 55
13 milliliters of blood per 100 grams. So in a baby whose
14 brain is merely 100 grams, that's -- it's just over
15 400 mls of blood per minute of passing through the
16 brain. I don't know what 400 mls is in pints in
17 American measures, but it's a good sized bit. So
18 there's 400 mls of blood going through the brain every
19 minute. And the majority of that blood is draining
20 through these bridging veins back into this sinus. A
21 proportion comes into these deep veins and goes that
22 way.

23 Now, if we've got 8 or 10 of these
24 draining on each side, they're carrying -- say they take
25 half the brain back, that's 200 mls of blood on each

1 side. They're big vessels. They're carrying a large
2 flow of blood. So that's the background to this.

3 When the brain was removed at autopsy,
4 these dural sinuses were not examined. We've already
5 heard yesterday from Dr. Sunderland that the baby
6 appeared to have a clotting problem. That can mean that
7 you form clots as well as you -- you bleed too much, you
8 can also be forming clots. And diffuse intravascular
9 coagulopathy means you form clots inside vessels. And
10 if you're really suffering with difficulty clotting,
11 sometimes you can clot this sinus. And if there's blood
12 clot in that sinus there, it's going to ease to oozing
13 back here and you can get subdural bleeding or you can
14 get bleeding in the brain itself. Now, I can find no
15 record in the report that this sinus was actually
16 examined, so we don't know if there was a clot in there.
17 It may or may not be relevant.

18 The other thing is, there was no record of
19 these bridging veins being examined to see whether or
20 not they had been torn. And they're quite important
21 because there is a hypothesis that if you -- if you
22 shake a brain around, if you shake a baby, if a baby is
23 subjected to severe impact, these vessels can be torn
24 because the brain moves relative to the dura, which is
25 firmly attached to the skull, and these vessels are said

1 to be torn. So if you can't see any tearing of vessels
2 at autopsy, if they're all intact, then that doesn't run
3 as a hypothesis as the cause of any subdural bleeding.
4 So at autopsy, there was no evidence of torn bridging
5 veins, but they weren't specifically described and
6 there's no evidence of thrombosis in these dural
7 channels as a course of subdural bleeding. So we -- we
8 don't know any more about that.

9 The brain was removed and went to
10 neuropathology for examination. The normal procedure is
11 at autopsy the brain is taken out. It's very soft. It
12 needs to be preserved, and it's put in a chemical called
13 formalin which fixes it and makes it go hard, so then
14 you can actually handle it properly, you can cut slices
15 through it, and we normally cut centimeter slices all
16 the way through the brain. We examine those in great
17 detail, take photographs, and then we cut little pieces
18 of brain about the size of a postage stamp and we
19 process those so we can look at those under the
20 microscope. So we select any areas that look abnormal
21 to the naked eye so we can really look in great detail
22 with a microscope. The examination of the brain -- of
23 the brain after it was fixed shows that there's a .2
24 centimeters -- 2 millimeter thick subdural bleed over
25 the right cerebral hemisphere. So on one side was a

1 very thin film of subdural blood.

2 There's softening and gray discoloration
3 of the brain tissue itself. There's focal subarachnoid
4 hemorrhage. Now, this is the subarachnoid space. It's
5 the space here where the fluid at the base of the brain
6 is to be found over the surface of the brain, and
7 there's a little foci of bleeding there in the
8 subarachnoid space, which is something we see very
9 frequently in any baby who's been suffering from lack of
10 oxygen supply.

11 Blood clot fills the right lateral
12 ventricle. So you can't see it here, but this leads
13 into the cavity which normally is found within the brain
14 itself and there was blood clot there. And this was
15 shown to be coming from the choroid plexus. And this is
16 something we see very common especially in premature
17 babies and babies around the time of birth. This is a
18 very friable area of tissue. It's constantly going
19 through it. It's got lots and lots of blood vessels.
20 And in Isis' brain there was blood leaking from this
21 choroid plexus and filling that lateral ventricle.

22 And then when the brain was sliced it
23 showed there was softening with no focal lesions. So
24 the microscopic examination of the brain showed no
25 bruises, no contusions, no focal lesions.

1 Slices through the spinal cord showed no
2 abnormality by naked eye. The brain was then examined
3 under the microscope and that showed fresh hemorrhage
4 within the dura, so up here over the surface, and that
5 was the dura that was described at post mortem, this
6 first subdural bleeding, and that was shown to be in
7 association with bleeding in the dura. So there was
8 bleeding into the dura as well as on the surface of the
9 dura. And I might add that babies of this age have huge
10 blood vessels in the dura. We're not quite sure why,
11 but they're much bigger when you're born than when
12 you're one year of age. They get smaller with time.
13 And so it's very common and again, in lots and lots of
14 the babies I look at who died shortly after birth
15 there's quite significant bleeding into the dura and
16 that's exactly what this baby showed as well.

17 There were some -- the nerve cells were
18 showing signs of acute necrosis. They were dying. This
19 is what one would expect in a baby who's been deprived
20 of oxygen for 30 minutes and then subsequently
21 ventilated.

22 There was fresh intraventricular
23 hemorrhage in association with the choroid plexus. That
24 confirmed what we're seeing with the naked eye. And the
25 pons demonstrates congestion and petechial hemorrhage.

1 That -- this part of the brain I mentioned down here was
2 congested and there were little hemorrhages in the
3 tissues around blood vessels. Now, when a brain gets
4 very, very swollen, the first thing that happens is it
5 comes up inside the skull. Now, in a baby the bones of
6 the skull aren't completely fused so they can -- they
7 can give a bit and the head can get a bit bigger and the
8 soft spot starts to bulge. But there comes a point when
9 it can't do that any longer, so the brain starts to push
10 down here and it's quite a tough membrane called the
11 tentorium supporting the brain here as part of the dura.
12 It gets compressed here and then it compresses against
13 this bony ring, the back of the skull, the top of the
14 spinal cord. And things start to shift down here. One
15 of the areas of the brain that gets very squashed is
16 this, the brain stem. So I think that that bleeding in
17 the pons there was secondary to a combination of lack of
18 oxygen, followed by swelling and compression, because
19 the brain was just so swollen at that point.

20 The final line in the neuropathology
21 histology says sections of the neocortex, that is the
22 gray matter all the way over the surface of the brain,
23 demonstrates perivascular rarefaction. In other words,
24 there's brain swelling and the perivascular tissue is --
25 around the blood vessels where they've been leaking

1 fluid, representing edema. So the cortex itself shows
2 only swelling. There is no description of any cortical
3 contusion in the neuropathology report. The spinal cord
4 is histologically unremarkable.

5 And finally, another sheet of paper, it
6 comes with the neuropathology report, and this is the --
7 something that's called amyloid precursor protein axonal
8 staining results. Now, our nerve cells all operate with
9 a cell body that's keeping everything working, and it's
10 the central mechanism of the function of a nerve cell.
11 And all of our nerves have long fibers which pass to
12 make contact with other nerve cells or with the muscles
13 throughout the body. And so all of the time when our
14 nerve cells are working, the main factory of the nerve
15 is up there in the cell body. It's making protein which
16 it's constantly passing down to the end so it can pass
17 messages to the next nerve or to the muscle. So that's
18 transport going on in axons all the time in life. If
19 you injure an axon by either tearing it or by depriving
20 it of its blood or its oxygen supply or of its glucose
21 or any other metabolic problem, that function cannot
22 continue and so this protein is not passed down in a
23 normal stream, but it becomes held up and you get lumpy
24 varicosities or if you completely sever a nerve fiber,
25 then you can get swelling. It's like a trickle dropping

1 out of a straw. You get a big blob at the end of the
2 straw because this protein is just collecting. It can't
3 pass over that gap.

4 We have a way of looking for this in
5 pathology and we use a protein -- one of these proteins
6 that's normally present in the axons called amyloid
7 precursor protein or BetaAPP. And we can apply this to
8 tissue sections and we can look for damaged axons and
9 it's a very accurate, very sensitive way for looking for
10 axonal damage, but it won't tell us if that's been torn
11 or that's been subject to hypoxia or hypoglycemia or all
12 these other things. It's nonspecific. We can only look
13 for patterns of damaged axons. If they're in big white
14 little bundles in the deep part of the brain, we can
15 begin to suggest they might be due to trauma.

16 So the neuropathologist who examined this
17 brain did this pattern of stains and they used the
18 BetaAPP protein, and they showed -- there's a little
19 scale here whether it was mild, moderate or severe.
20 They found severe staining in the corpus collosum, but
21 it's quite notable that they didn't examine the
22 midbrain, and in the pons they found just a little bit
23 mild axonal staining, none in the medulla, none in the
24 spinal cord. And that implies to me if there's no
25 staining down here, one can't be sure there's any

1 traumatic axonal injury at all, because all of these
2 changes could have been secondary to the hypoxia. They
3 even then go on to do a study of that severe injury
4 identified and they put multifocal traumatic axonal
5 injury or diffuse traumatic axonal injury or vascular
6 ischemic axonal injury. And in fact, they didn't find
7 any of this. So we've got two sets of results here,
8 neither of which give any indication of any traumatic
9 damage to the nerve fibers in this brain.

10 Q. And was this staining done by the
11 neuropathologist at SWIFS or -- or working with the --
12 or working with SWIFS? That's the medical examiner's
13 office that did the original pathology report.

14 A. It's a forensic pathology consultation report
15 from the University of Texas Southwestern Medical
16 Center, and it's signed on by Dr. Dolinak and Dr. White.

17 Q. Okay. Thank you. And the date of that is --
18 do you have a date on the front page there?

19 A. Date submitted, 20-12-2000. Printed on the
20 27th of February 2001.

21 Q. Okay. I can take that back now. Thanks.

22 A. So I'm afraid that was rather protracted, but
23 that was my review of the documentation relevant to
24 Isis' admission and death.

25 Q. Okay. Could you just briefly sum up what that

1 background information gave you, and that's the
2 objective medical evidence. What -- what impression
3 were you left with at that time?

4 A. I was left with the picture of a brain that's
5 suffering from deprivation of blood and oxygen supply.
6 This brain was swollen with hypoxic ischemic change.
7 That's deprivation of blood and oxygen supply. There
8 was a little bit of thin film bleeding in the dura,
9 which may be secondary to the baby's treatment in the
10 hospital, because it wasn't on the brain scans. There
11 was no evidence of any trauma in the brain whatsoever.
12 All of these changes are secondary to a period of
13 deprivation of blood and oxygen supply, and this was
14 clearly documented as being for some 30 minutes at the
15 time of the baby's admission to hospital.

16 Q. Okay. Did you ever -- were you ever able to
17 review the brain slides?

18 A. I was. And that was recently. I think it was
19 earlier this year that I was sent some brain -- sections
20 of the brain that had already been stained. I had 18
21 sections of the brain to examine. My results of
22 examining those were I found exactly the same findings
23 as had been described by Dr. Dolinak and Dr. White. I
24 agreed with everything that they have seen. The only
25 thing I would say is I wasn't able to do any further

1 stains to look more closely at the dura, which I would
2 have liked to have done, because there was a layer of
3 cells which suggested a very old subdural bleed, which
4 could have been there for some, oh, at least one to two
5 weeks, which may have been rebleeding. But I'm not
6 happy to make that diagnosis because it's very subtle
7 and it needs to have extra stains to be sure. So I
8 didn't comment on that, because I couldn't do the stains
9 I would like to do to be certain.

10 So there's just a question that there may
11 have been some subdural bleeding a couple of weeks
12 before this event. We know there wasn't any there on
13 the scan when she was admitted, and we know that on the
14 12th of October when she was examined there was no
15 evidence of a fluid collection. Her head circumference
16 was, in fact, slightly small and the soft spot was --
17 was normal and it wasn't raised. So this certainly
18 wasn't a fluid collection. It's possible it could have
19 been a little bit of a membrane resulting from an old
20 bleed, but there wasn't a fluid collection.

21 Q. I see. Now, would it be usual to obtain
22 recuts or -- that you could stain and look for -- for
23 additional evidence of a possible older bleed?

24 A. That's what I would normally like to do, yes.

25 Q. And should those be available under normal

1 procedures?

2 A. Yes.

3 Q. Okay. So that's something that we could ask
4 for if we wanted to explore the issue of the --

5 A. Yes, and I would push to have those if I were
6 able to have the time to look at them.

7 Q. Okay. Thank you. I think we've already
8 covered the report of the other neuropathologist and
9 you -- and you agree with that report?

10 A. Yes, I do.

11 Q. The report of Dr. White?

12 A. Yes.

13 Q. Have you reviewed any reports by Dr. Leestma?

14 A. I have seen what Dr. Leestma's written, yes.

15 Q. And do you have any disagreement with that in
16 the area of the brain?

17 A. No, I don't.

18 Q. And were you here for part of the testimony of
19 Dr. Harry Wilson?

20 A. I was, yes.

21 Q. And Dr. Wilson testified there were one or
22 more contusions to the brain. Do you agree and --

23 A. Well, I agree that what he showed was a bit of
24 tissue with hemorrhage into the brain tissue, and that
25 would be defined as a brain contusion, but it's not

1 specifically a contusion. It's just leaking of blood
2 from blood vessels. And we know that happens in swollen
3 brains when they're under pressure. He did state in his
4 evidence that came from the cortex, but I didn't see
5 that any bleeding in the cortex in the sections I looked
6 at, and there's no description of it in the sections nor
7 in the microscopic, the naked eye description of the
8 brain either, in any of the reports I've seen either in
9 the neuropath report or in the post mortem report. So
10 I -- I believe what he may have done is had a section of
11 the pons, and -- where there was bleeding and he mistook
12 that for cerebral cortex. And further, there were no
13 contusions on the brain scan.

14 Q. So I take it that the other -- since you agree
15 with the other neuropathologists, in -- in your view,
16 Dr. Wilson's report is not supported by the
17 neuropathology by -- done by Dr. White and Dr. Dolinak?

18 A. On that issue -- yes, I mean, otherwise he's
19 describing what everybody else is seeing, a swollen
20 brain with neurons that are beginning to die. But on
21 that specific issue of the contusion, no, I don't -- I
22 think we're all out of step with him. And the other
23 thing is that if he wanted to be sure that was a
24 contusion, he would need to do the BetaAPP staining and
25 show that there were torn axons around it, because that

1 contusion would have been associated with traumatic
2 tearing of axons as well.

3 Q. And to make sure that I understand, the damage
4 to the brain that you're seeing here is fully consistent
5 with hypoxic ischemic damage, which is lack of oxygen to
6 the brain from any cause?

7 A. As Dr. Sunderland mentioned yesterday, it's
8 lack of either blood supply or of oxygen in that blood
9 supply. We don't know which is more important. It's
10 probably a lack of blood supply that's more important,
11 but we always use a cue test to get its color so it will
12 show it's either hypoxia or ischemia or a proportion of
13 both. And that sort of -- the sort of brain findings we
14 have in this baby is exactly the sort of thing I will
15 see in a baby who's collapsed after cardiac arrest in
16 hospital during surgery or after a heart operation or a
17 baby who's been suffocated or a baby who's had any --
18 any form of obstruction of oxygen; severe pneumonia,
19 something that prevents blood and oxygen getting to the
20 brain.

21 Q. Okay. I think we've covered quite a few of my
22 questions actually. In the materials that you have
23 reviewed, are there any external signs of head trauma --
24 and I'm going to actually put out the -- the bruise
25 chart to which you referred. I take it you chose that

1 because it was relatively contemporaneous --

2 A. That's right.

3 Q. -- with hospital admission?

4 A. Yes.

5 Q. And I believe that is -- I'm not sure it says
6 on here. I think on other ones it says this was
7 prepared by Ms. Gorday, the sexual assault nurse
8 examiner. So in -- this is the -- the bruise chart
9 prepared shortly after hospital admission. Are there
10 any external signs of head trauma or recent head trauma
11 on that chart, or can you comment on what you see there?

12 A. Yes. As I say, what I have seen in the brain
13 is nonspecific. It's secondary to failure of blood and
14 oxygen supply. And one of the things that can cause
15 this is trauma. So it's obviously one of the
16 differential diagnoses. So as a neuropathologist, if I
17 can't be sure myself, I need to look at the rest of the
18 findings. And the two things that worry me enormously
19 when I look at a brain like this is the presence of
20 fractures and the presence of bruises. And here we have
21 evidence of an old fracture in the clavicle, so we can
22 discount that, because it's way out of the time frame
23 we're talking about, but we have multiple bruises and
24 bruises to the head, and that is immediately a cause of
25 great concern.

1 Now, to be sure whether they are indeed
2 related to the collapse, they would have to be
3 contemporaneous. They would have had to occurred at the
4 time this baby is said to have had brain trauma. So the
5 only way we can do this is by looking at those bruises
6 and trying to estimate their age. It's clear from this
7 chart that almost all of them are brown. The few purple
8 ones, one on an eyelid, I think it's that one right
9 there, which was said to be purple, and this one and I
10 think this one. These may well have been related to
11 therapy as may this be. I think sometimes babies have
12 tape stuck on their eyes and -- but certainly it's
13 possible to get some bruises related to therapy. So the
14 only way in which one can be sure is firstly, if they're
15 found to be deep, extensive into the subcutaneous
16 tissues, and secondly, by examining them under the
17 microscope and looking for evidence of the breakdown of
18 red cells so you can actually time them. Clinically --
19 again, I'm not a general forensic pathology, bruises are
20 not my area of specialty, but if they're described as
21 brown it usually implies that they're old. If they're
22 red or purple or blue, they usually are a little bit
23 fresher, but I'm not an expert in dating them.

24 MS. KIRKWOOD: I'm going to take those
25 back so I can put them back. They're just used as

1 visual aids here. Thank you.

2 Q. (BY MS. KIRKWOOD) Okay. You've used the word
3 "secondary" at times. I'd like you to -- could you
4 explain the difference between primary brain damage and
5 secondary brain damage?

6 A. When we're talking about traumatic brain
7 damage we can talk about primary trauma. Trauma being
8 some sort of wound or injury caused by the application
9 of physical force. And I think the Oxford English
10 Dictionary defines it as being in the setting of some
11 violence. So trauma is what happens to tissues when
12 they're subjected to some violent physical force. And
13 in brain, that means tearing of -- physical tearing of
14 structures and it can occur in two ways. You can have
15 physical tearing of the brain tissue itself and then we
16 will get tearing of the axons and we can look for that
17 with the BetaAPP stain that I described.

18 We can also have tearing of blood vessels
19 so you get hemorrhage. And that can be hemorrhage in
20 the brain itself, hemorrhage around the brain in the
21 subarachnoid or subdural space, all of them due to
22 traumatic rupture of blood vessels.

23 The secondary changes of brain injury
24 include brain swelling, they include -- again,
25 hemorrhage doesn't have to be primary. That can also be

1 secondary, because a baby who's been deprived of oxygen
2 will have weak blood vessels. Oxygen damages the lining
3 of the blood vessels and fluid and then blood can seep
4 out. And so we -- we can have, secondary to the brain
5 swelling itself, the brain's own oxygen supply will be
6 cut off so we can get hypoxic ischemic injury. All of
7 those are secondary effects. The only things that we
8 can look at when we look at a brain and say, yes, this
9 is primary traumatic injury or torn axons, contusions on
10 the surface of the brain -- I should add that. They're
11 usually seen in adults. We don't see them very
12 frequently at all in infants -- are hemorrhages due to
13 obvious rupture of blood vessels.

14 Q. Okay. So to make sure that we understand
15 this, a primary brain damage is -- would involve impact
16 to the head. Is that right?

17 A. Yes.

18 Q. And what should the rest of the body look like
19 if it's a -- if it's an injury to the head type of case?

20 A. Well, it depends how that injury is -- is
21 inflicted. If it's an injury that's been inflicted on a
22 baby and somebody's picked up a baby and slammed it into
23 a wall or something, then there would be likely to be
24 grip marks and bruises where the baby's been picked up
25 and held, or fractured ribs due to the pressure or other

1 fractures elsewhere in the body. So the primary brain
2 damage won't cause any effect on the rest of the body.
3 The rest of the body will be fine until the hypoxia sets
4 in.

5 Q. Okay. And on secondary brain damage, if it --
6 if it's a healthy baby -- if it's a healthy baby who has
7 simply been hit on the head, which is what I understand
8 is the State's theory, a healthy baby who's simply been
9 hit on the head, should -- how should the rest of the
10 baby's organs look or what should their lab reports be
11 like if that's all that has happened, they've been hit
12 on the head?

13 A. Well, the secondary effects of being hit on
14 the head will be very serious, because two things can
15 happen. Firstly, the brain can start to swell, and as
16 the brain swells and the brain stem where I mentioned
17 the pons on that diagram will be compressed. That's the
18 center where all the control of breathing and of heart
19 rate and of consciousness is to be found. So if the
20 brain swells and that's compressed, then the baby's
21 going to collapse and stop breathing. Also, if the
22 brain -- if the baby is given a sufficient impact to the
23 head if it's a -- if it's the fall and the baby lands on
24 the head and the body comes afterwards or if the baby is
25 hit against a hard surface or indeed if the baby is

1 shaken, you may damage the neck here and you may get
2 primary damage in that part of the brain that controls
3 respiration and heart rate and so on, so the baby will
4 then collapse.

5 Q. And was there any damage to the neck or the
6 spinal cord in this case?

7 A. Not that was recorded, no.

8 Q. Okay. Now, on secondary brain damage I can
9 see that there can, in a sense, almost be secondary
10 brain damage even if they're hit on the head. But let's
11 take a case in which the baby died of something else
12 entirely; died of pneumonia, died of cardiac arrest,
13 died from an overdose of medications, died for whatever
14 reason, but -- but a natural cause of death. Will there
15 be damage to the brain and under what circumstances?

16 A. If the baby is deprived of blood and oxygen
17 supply, yes. And the longer that is, the more likely
18 there is to be brain damage. And in the period of 30
19 minutes without a cardiac -- a cardiac output, then the
20 brain is likely to suffer massive damage, because all of
21 the tissues of the brain are going to suffer, but
22 particularly the walls of the blood vessels.

23 Q. Okay. Now, if the baby suffered at the
24 cardiac arrest or whatever -- or whatever event caused
25 the death and the baby is not resuscitated, simply dies,

1 no efforts at resuscitation, almost a classic SIDS death
2 or you may have a cause of death, what would the brain
3 look like at autopsy? Would the brain be damaged?

4 A. No. One of -- the definition of Sudden Infant
5 Death Syndrome is there's nothing to be seen
6 pathologically. And sometimes one might see a little
7 bit of brain swelling, but essentially in a baby who
8 dies and dies suddenly, there will be no finding in the
9 brain at all.

10 Q. So are -- is a secondary brain damage that one
11 sees in cases like that due to the fact that the baby
12 has been resuscitated and kept on life support?

13 A. It's due to the long period when the baby was
14 being resuscitated at home where the heart wasn't
15 pumping normally, it was pumping far too fast. A heart
16 pumping that fast cannot get an effective flow of blood.
17 It's just it's quivering and the blood's not going to be
18 moving very fast and there's gasping respiration, and I
19 don't know what the effect of having a large amount of
20 blood in the mouth -- may have got in the airway as
21 well. So all of that would have compromised the blood
22 flow and the blood supply to the brain, and the baby --
23 the baby was kept going for 30 minutes and then
24 resuscitated, so all of those brain cells and all of
25 those blood vessels that have been damaged by hypoxia

1 are then subject to reflow.

2 And what is particularly important, in my
3 opinion, is once cardiopulmonary resuscitation has
4 begun, the point of this is to press on the heart to get
5 blood to pass through the blood vessels. That sends
6 blood backwards up the veins into the brain, because the
7 brain normally -- blood normally drains down by gravity
8 and there's a -- a very sophisticated pattern of blood
9 vessels so the brain doesn't lose all its blood at once.
10 It flows down in a very regular programmed way, but
11 there are no valves. So if you press on the heart, you
12 get blood shooting straight back into the brain, that's
13 going to go into those sinuses in the dura. It's going
14 to leak into the dura itself, because all of those blood
15 vessels are going to be leaking, and you may get
16 bleeding in and around the brain as secondary to a
17 combination of a long period of hypoxia and then
18 cardiopulmonary resuscitation.

19 Q. Now, I learned something entirely new there.
20 And -- and that blood does not flow back into the brain,
21 because as I understand it, the brain is a very
22 protected -- in other words, it -- the blood cannot flow
23 back into the brain itself. It flows back into the
24 dura. Am I understanding that?

25 A. All the blood from the brain coming out

1 through the veins comes through the dura, all of it. So
2 if you send it backwards the wrong way, it's going to
3 go, first of all, into the dura, and that does provide
4 some protection from it going into the tissues of the
5 brain itself, because it's got a -- the dura itself has
6 a lot of -- sort of a blood reservoir as well. But it's
7 certainly -- and I'm told by my colleague who's a
8 neurosurgeon that he recently had a baby who had a
9 cardiac arrest while he was operating on the brain. And
10 when they immediately started pumping on the chest, he
11 could see these great surges of blood coming up through
12 these veins to the brain because there's nothing
13 stopping it. There's no valves. In normal heart
14 function, the heart is going to send blood out through
15 the arteries, and they'll go out to the brain because
16 one part of the heart contracts and then that part of
17 the heart relaxes and allows the venous blood to come
18 back. So it's going in sequence. When you're just
19 pressing on the heart from the outside, you're sending
20 blood up both arteries and veins at the same time.

21 Q. And then -- and then the -- the blood from the
22 veins goes back into the dura?

23 A. Yes.

24 Q. Does it go back through the bridging veins or
25 are there other routes?

1 A. I can't answer that question, but we think
2 that when a baby is ventilated the pressures in the
3 chest are much greater than in normal respiration, and
4 it's very, very common to see the bridging veins and the
5 surface brains of the -- the surface veins of the brain
6 as very congested when we do autopsies on babies who
7 have been on a ventilator. So we know that there's an
8 increased pressure. And that backflow does get back as
9 far as the surface veins on the surface of the brain
10 itself.

11 Q. Okay. Thank you.

12 Does any of the medical evidence that you
13 have reviewed suggest that the child was ill in the days
14 before hospitalization? And I think you said you wanted
15 to take out basically not all caretaker reports, but --
16 but to move back to the objective contemporaneous
17 evidence?

18 A. Well, we have the evidence from -- from the
19 visit on the 10th of October, was it -- the 12th of
20 October that the baby wasn't breathing normally. That's
21 maybe an ongoing condition that the baby wasn't growing,
22 but then I found that the evidence in the 911 call of
23 passing blood in the urine, of bleeding at the time of
24 resuscitation, and then in Dr. Levy's clinical note that
25 the baby had -- had a bit of a temperature perhaps, but

1 also had had black, sticky stools. That finding
2 together with the blood in the endotracheal tube and
3 together with the passing blood the night before
4 suggests that this baby wasn't well before she came into
5 hospital. And I think also Dr. Levy noticed that she
6 was -- she had been congested and coughing for three or
7 four days, so she may well have had some sort of chest
8 infection as well. So there were several clues to
9 suggest this wasn't a perfectly well baby before she
10 came in.

11 Q. And what about the labs?

12 A. Well, that as well shows that there was
13 obviously a real problem with blood clotting.

14 Q. Taking that evidence together, do you have any
15 sense of whether the blood clotting problem arose from
16 events occurring in that hour before hospital admission?

17 A. I would have thought it was extremely unlikely
18 that one could derange those clotting factors in that
19 time. And also the history we have is of respiratory
20 problems and sticky stools and passing blood outside
21 that period of time. This baby was ill in the 24 hours
22 before she was admitted, at least in the evidence that
23 we have in the papers.

24 Q. And what does black, sticky stool mean? Or
25 what does black stool mean?

1 A. It's called melena, and it's due to blood
2 getting into the gastrointestinal tract. We know at
3 autopsy there didn't appear to be any blood in the
4 esophagus or the stomach because it was opened and there
5 was 3 mls of greenish fluid, but there's no record that
6 the rest of the intestine was opened and that's the sort
7 of place one is most likely to get leaking. It mixes in
8 with the stool and it becomes really sticky and nasty
9 black material.

10 Q. Okay. We've actually covered a great deal.
11 Dr. McClain has indicated in one or more of her
12 affidavits that subdural hemorrhages are signs of brain
13 trauma. And do you agree with that?

14 A. I do absolutely, but if you look at infants
15 who have subdural bleeding, until a couple of years ago
16 we would have said that trauma is the most common cause
17 of subdural hemorrhage and I have no problem about that
18 at all. I qualify that because in 2008 we had three
19 papers published by 2008 showing that normal babies
20 after they're born -- if you do MRI scans on normal,
21 asymptomatic newborn babies, about 46 percent of them
22 have some degree of subdural bleeding. And this is the
23 effects of normal childbirth. It's not just abnormal
24 instrumental childbirth, but even normal childbirth can
25 produce a degree of subdural bleeding in infants.

1 Now, if 46 percent of babies have this
2 bleeding, clearly it can't be significant clinically in
3 the vast majority, because otherwise we would not be
4 here. But some babies do go on to be shown in the later
5 months of life, if you look at any pathological
6 textbook, and there are a couple of studies that show
7 that babies who die of Sudden Infant Death Syndrome --
8 for example, there's one study showing that 25 percent
9 of Sudden Infant Death babies have a little thin
10 membrane inside the dura. Now, if you have blood
11 touching the dura, it's out of blood vessels, it's in
12 the wrong place, it causes inflammation, irritation. In
13 exactly the same way as if you graze your skin, in the
14 next couple of days you'll have a raised red area that's
15 painful, swollen and it gets a scab. And if you knock
16 that scab off, it will bleed again. And then gradually
17 as time goes on, the redness goes away, the swelling
18 goes away, and then you end up with a little white scar.
19 Exactly the same happens in the dura. And these babies
20 will all go through that process of forming that scar
21 tissue, and in most cases it forms a white scar and
22 causes no problem. But there are babies who don't do
23 that and who collect fluid and go on to have symptoms
24 later on. We don't know why, we don't know how many,
25 but we know that it happens.

1 So as well as trauma being a primary cause
2 of subdural hemorrhage, we have to consider the
3 possibility of the petechial birth-related subdural
4 bleeding. Then there are other causes. Meningitis is
5 sometimes associated with subdural bleeding. Thrombosis
6 of the sinus is associated with subdural bleeding. And
7 some babies are born with very abnormal blood vessels
8 which can rupture like a -- we call it aneurysm that
9 will rupture, and then babies with coagulopathies are
10 said to also have subdural bleeding. And then some very
11 rare metabolic disorders, but there's a little group of
12 them that are uncommon but must be considered. So
13 there's a whole range of causes of subdural bleeding of
14 which trauma was once thought to be the most common, but
15 I think now birth-related subdural bleeding has to be
16 coming up quite high on the list.

17 Q. Okay. Has a list of alternative causes for
18 subdural hemorrhages that causes -- other than trauma,
19 has that list expanded over the past decade?

20 A. I think that it has in terms of our
21 understanding of bleeding related to birth. And there
22 is also quite a lot of information coming out now that
23 failure of blood and oxygen supply or hypoxia itself may
24 be related to subdural bleeding. And I think this is
25 particularly so in young infants and infants in the

1 first year of life, certainly in the first six months of
2 life, because we know that the anatomy is very different
3 in these babies. We know the dura is very different.
4 It's got a mass of blood vessels and it responds in a
5 different way at that age than it would in a baby who's
6 2 or 3 or 10 years of age.

7 Q. So it's fair to say this is a very developing
8 area?

9 A. Absolutely right. I myself am currently
10 involved in collaborative research looking at the dura,
11 because up until now we've thought the dura was just
12 fibrous tissue that supports the brain. It's a fibrous
13 tough membrane that stops the brain from getting
14 physical trauma. But it's absolutely full of nerve
15 cells, it's full of blood vessels -- I'm sorry, not
16 nerve cells, nerve fibers. It's full of blood vessels.
17 It probably absorbs fluid. We think it's probably very,
18 very important in controlling the homeostasis, keeping
19 the environment of the brain in a stable situation by
20 having some control over the fluid that's circulating
21 around the brain. So we're learning lots and lots of
22 things that the dura is doing now, and it's anatomically
23 equipped to do things that we don't understand. But
24 there's no way that that dura would have all of those
25 blood vessels and all of those nerve fibers if they

1 weren't performing some sort of function and we're
2 looking very closely to try and understand just what
3 it's doing.

4 Q. I think Dr. Wilson made the point with -- that
5 form follows function or is related to function. Is
6 that what we're looking at here?

7 A. Absolutely, yes. Great -- great relation.

8 Q. Yes. Okay. So as we're looking at the dura
9 these days, we had thought it was simply a protective
10 covering for the dural vein. Is that right?

11 A. For the brain itself. We thought it was just
12 a nice firm, fibrous support so the brain doesn't go
13 flopping around inside of the head.

14 Q. I see. And then it has -- and then it has the
15 dural vein inside it also?

16 A. Yes, it is -- and from -- certainly from
17 embryological studies that Dr. Mack has been doing
18 recently, the way the brain and its venous drainage
19 develops is that it's surrounded by a plexus of vessels.
20 That's lots of little interlinking vessels. How can I
21 describe it? But just lots of little vessels which
22 gradually become smaller and -- and confined to the big
23 sinuses that we recognize in the adult. But this
24 process is still going on at the time that we're born so
25 that we still have more sinuses around our brains when

1 we're born than we do at the end of the first year of
2 life. We don't know why, but it may be because when
3 we're born our heads have to be compressed and that
4 provides a sort of reservoir. So the brain when it's
5 compressed during delivery or when the heads come out
6 and the chest is being compressed, all of this blood is
7 going to be backing up in the brain. So maybe the sinus
8 just gives it some space so that blood doesn't have to
9 go into the brain, but it can be absorbed in these
10 sinuses, and it acts as a reservoir because we're
11 unusual in that we have very difficult deliveries.

12 If you look at our primate cousins, a few
13 million years ago in evolution we had small brains and
14 we walked on all fours and we had big wide hips. Now
15 women, some of them, you get narrower hips so you can
16 walk upright nicely, and we've got bigger brains. So
17 the mismatch between the size of our brain and the size
18 of our pelvis means we can't just get up and walk out
19 when it comes to term like a chimpanzee will, but our
20 babies are born 8 months -- perhaps 18 months immature.
21 We're not -- we don't catch up with chimpanzees until
22 we're about 18 months of age. So our brains are very
23 immature and they respond very differently from adults.
24 So we're having to rethink all of our understanding of
25 the function of the dura, the reactions of the dura, and

1 the reactions of the brain in that period of life.

2 Q. I was looking here to see if -- if I had any
3 illustrations here. They're not as clear as they should
4 be. I think I do have a picture here. This is actually
5 from a paper by Julie Mack and can you tell us who Julie
6 Mack is?

7 A. Julie Mack is a radiologist who works in
8 Hershey, Pennsylvania, and she's been working with
9 children who have subdural hemorrhages due to very
10 unusual metabolic diseases which occur in -- in the
11 Amish population and she's doing a lot of research on
12 how subdural hemorrhage can occur in nontraumatic
13 conditions.

14 Q. Okay. And I'm going to -- and this paper is
15 also -- you are a coauthor on that paper. Is that
16 right?

17 A. I am, yes.

18 Q. And who is James Eastman?

19 A. James Eastman is a neuropathologist who's just
20 retired from Hershey.

21 Q. So -- so that's another American -- an
22 American pathologist?

23 A. Yes.

24 Q. Is that right?

25 So I think someone had asked the other

1 day, but is there a good deal of interplay between the
2 English and the Americans in these areas of medicine?

3 A. Oh, very much so, yes.

4 Q. So it's not unusual to see a paper that's
5 coauthored by the English and the Americans or maybe
6 even people from other countries?

7 A. Oh, absolutely not. With Internet and e-mail
8 connection, it's very much easier to collaborate now.

9 Q. I'm going to see if -- if this one shows up.
10 I would just like you to give some idea. I think you
11 said that there are 8 to 10 bridging veins that drain
12 these large quantities of blood that go through the --
13 they go through the vein -- they come in through the
14 arteries, through the veins, and then come out through
15 the bridging veins. Is that right?

16 A. That's correct.

17 Q. And are drained through the dural sinus. And
18 is there a bridging vein shown on there? Or should I
19 give you --

20 A. There should be one there. I probably should
21 see it.

22 MS. KIRKWOOD: Is that all right if I
23 approach and give this --

24 THE COURT: Yes. Absolutely.

25 A. Thank you very much. Oh, that's a different

1 picture.

2 THE WITNESS: May I go to the picture and
3 just --

4 THE COURT: Sure. Sure, Doctor.

5 A. This is the bridging vein. This is coming
6 from the brain substance running over the surface of the
7 brain in the subarachnoid space and then it's going into
8 this dural sinus here. So its course is after the
9 brain, in the subarachnoid space, and briefly through
10 the dura and goes into this sinus, which is going to
11 take it back to the heart.

12 Q. (BY MS. KIRKWOOD) Okay. And then a picture
13 down below to the right?

14 A. This is where the dura has been lifted off the
15 brain. So in life, the scan here, we've got the dura up
16 here over the surface of the brain. Infant post mortem
17 we open the head, we peel the dura off the brain.

18 THE WITNESS: Can you -- can you hear me
19 all right?

20 THE REPORTER: Yes.

21 A. And you look at the underside of the dura.
22 We've lifted it off the arachnoid, that's there, and
23 here's a bridging vein which is coming from the
24 subarachnoid space there and you can see that there's a
25 little part of membrane, a little channel there which is

1 the arachnoid as the brain goes then into the dura and
2 disappears in the dura there and goes into the sinus.
3 So this vein is spending most of its time in the
4 subarachnoid space. When it does eventually go through
5 the dura it has a sleeve of arachnoid covering it until
6 it's well inside the dura.

7 Q. (BY MS. KIRKWOOD) And so with 8 of these
8 bridging veins, 8 to 10 of these bridging veins draining
9 all of the blood that's going through the baby's brain,
10 if there were a burst bridging vein, what would you
11 expect to see at autopsy --

12 A. A torrential bleed.

13 Q. -- or in a CAT scan?

14 A. A torrential bleed. Thick blood. Even
15 thicker than that. The sort of subdural that we see, we
16 had a baby come into our hospital just a couple of weeks
17 ago who had fallen out of a 6-foot bunk bed and had a
18 massive thick subdural blood on one side that was
19 pushing the brain right across. It was growing so fast
20 that unfortunately the baby died. But that's the sort
21 of bleed that happens when you rupture one of those
22 vessels. And if surgeons sometimes have to go in to
23 operate to drain that blood, if they open the skull to
24 get out the blood, they'll have blood coming out at
25 them. It's torrential.

1 Q. Okay. And did we see that in this case?

2 A. No, we didn't.

3 Q. And that -- that's what you would expect from
4 a burst bridging vein?

5 A. Yes.

6 Q. A torrential amount of blood in the area of
7 the burst bridging vein?

8 A. Yes.

9 Q. Okay.

10 MS. KIRKWOOD: Could I have that back?
11 Or I will lose everything. I have very few things I
12 haven't lost yet. Okay.

13 Q. (BY MS. KIRKWOOD) I think we have already
14 talked about the torn axons. You saw no -- no
15 indications of traumatic injury to the axons in the
16 brain?

17 A. No.

18 Q. Okay. And no evidence of torn bridging veins.
19 In fact, the evidence that's there is contrary?

20 A. I wouldn't say that, because they can only be
21 examined at the time of the autopsy and there was no
22 record.

23 Q. Okay.

24 A. But the volume of blood and the fact that
25 there wasn't a large volume, what we call a space

1 occupying bleed pushing the head to -- the brain across
2 was not seen on the scan, so I -- I don't think there
3 could have been torn bridging veins.

4 Q. Okay. Just as a note to the side to bring
5 this down to a very layperson perspective, if the -- if
6 Rooks found in the 2008 article that 46 percent of
7 infants of subdural hemorrhage, if the theory that
8 subdural hemorrhage causes or -- or is in -- almost
9 inevitably linked with brain damage is correct, that
10 would lead to a brain damage rate of 46 percent. Is
11 that right?

12 A. Oh, yes, if it were associated with brain
13 damage, absolutely. But there are many, many papers in
14 the literature studying children who have come to
15 hospital, say, after falling off a piece of playground
16 equipment or something and have a broken leg. And if
17 they're, by any chance, scanned, it's quite common to
18 find there's also subdural blood, but it's not
19 symptomatic. So subdural bleeding can be quite
20 asymptomatic.

21 Q. I see. I believe that Dr. Wilson pointed to
22 retinal hemorrhages as signs of trauma?

23 A. Yes.

24 Q. And can we discuss that and would it be
25 helpful for you to have a photograph of the retinal

1 hemorrhage?

2 A. It may be, because I want to have a little
3 caveat here. I don't regularly examine eyes. I don't
4 look at eyes in life. I only am willing to speak about
5 retinal hemorrhage in as far as I want to just -- to
6 perhaps show the anatomy in relation to the brain, and
7 that, of course, in keeping up with the literature I am
8 aware of the issue of what retinal hemorrhages can tell
9 us about brain injury. So if I can be permitted to
10 proceed just to explain the anatomy, that --

11 Q. That would be helpful?

12 A. That would be helpful.

13 THE COURT: Yes, you may.

14 MS. KIRKWOOD: Yes, it's a picture of the
15 eye, the colored picture. It's State's Exhibit -- no,
16 maybe we didn't use the other one.

17 THE WITNESS: I don't think you need that
18 one.

19 MS. KIRKWOOD: Okay. Fine. Thank you.
20 This is one of the eye. This is one of the State's
21 earlier exhibits. Is it marked --

22 MR. MURPHY: Can we get the number,
23 please?

24 MS. RUTH JOHNSON: It's Exhibit 33.

25 Q. (BY MS. KIRKWOOD) This is State's Exhibit 33.

1 A. This picture, I think, was put up yesterday,
2 and it's a picture of an eye which has been cut in half
3 so we can see into it. So the front of the eye is here
4 and that's the -- the part that we would see, the iris
5 that we see when we look into an eye, and this is the
6 lens of the eye here and this is the cavity, and this is
7 what's called the optic nerve.

8 Now, this is where it goes and joins the
9 brain. So the optic nerve is a direct extension of the
10 brain, and the retina is, in fact, just a piece of brain
11 that grows out on stalks in the -- about the 4th to 6th
12 week of gestation after conception. So it's very early
13 that this starts to form. So the -- the -- the bit of
14 brain grows out and it extends to make the retina. So
15 that's neural tissue. It takes with it its dural
16 covering. So the optic nerve sheathe here is dura, and
17 then that makes up what we call the sclera of the eye.
18 So this is all dura.

19 And here in the optic nerve, the blood
20 vessels -- the artery comes in and brings blood to the
21 eye and the vein goes out and takes blood away from the
22 eye. And to get from inside the eye back here into the
23 blood vessels in the middle, they're going to have to
24 cross the dura at some point. And the dura also has a
25 subdural space and a small subarachnoid space here in

1 the optic nerve. So if we have raised pressure inside
2 the brain, we're going to exert that raised pressure on
3 all the structures in the optic nerve which means, first
4 of all, because brains have got thin walls, we're going
5 to obstruct blood coming out of the eye so the venous
6 blood can't get out and then will stop arterial blood
7 getting in.

8 So it's just to express to you a simple
9 plumbing issue, that if you block the pipe that's
10 bringing the blood back from the retina, it's going to
11 back up in here and you get retinal bleeding. And you
12 can also get intradural bleeding, which is otherwise
13 known as optic nerve sheathe hemorrhage, and that's
14 exactly the same as the intradural bleeding that we saw
15 in the brain that Dr. White and Dr. Dolinak described in
16 this baby. So the pressure of -- raised pressure,
17 damaged vessels cause bleeding in the dura as well as in
18 the optic nerve sheathe, and in my opinion, in a baby
19 who's got very high raised intracranial pressure, it's
20 one of the causes of retinal hemorrhage, and
21 coagulopathy is another of the causes of retinal
22 hemorrhage. And although retinal hemorrhages in
23 children are very significant and very important as an
24 indicator of possible abuse, there's a list of 30 or 40
25 different conditions which may contribute to retinal

1 bleeding, and raised intracranial pressure and
2 coagulopathy are two of them.

3 Q. Okay. And we know that this baby had both
4 simply from the fact that she had the 30-minute down
5 time with the deprivation of oxygen followed by
6 resuscitation?

7 A. She did. And on the very first scan she had
8 signs of brain swelling. So we know that the brain was
9 swelling, and that is very much -- very likely to be
10 associated with the raised intracranial pressure. We
11 don't know if the fontanel was tense, but we do know she
12 had brain swelling on the scan, which would suggest
13 there was raised pressure.

14 Q. And the brain swelling occurs from lack of
15 oxygen from any cause. Is that correct?

16 A. Yes.

17 Q. Or lack of blood flow?

18 A. Lack of blood and oxygen, yes.

19 Q. Okay. There have been some issues and see if
20 you feel it's in your area to address them. There's
21 certainly been testimony that the baby had some illness
22 and you concur with that prior to hospital arrival. And
23 the issue has been whether a serious illness that
24 results in death necessarily presents as showing severe
25 symptoms.

1 A. I think the worrying thing about babies is
2 that they can have severe symptoms but they can collapse
3 very quickly. I did a couple of years in pediatrics
4 before I became a pathologist and that's what made me
5 become a pathologist, because it's very easy to
6 overlook, obviously, a few minor signs in a baby and
7 suddenly they turn around and die on me and it's very
8 frightening to see. So I'm better off in a path lab.

9 Q. And if -- and if that occurs and it's -- well,
10 could that occur equally for caretakers, that there are
11 signs that are nonspecific concerning, but that result
12 in a sudden crash?

13 A. Oh, yes. Yes.

14 Q. So even doctors can miss it?

15 A. Very much so. Yes.

16 Q. I'm going to ask you a little bit -- you've
17 said that you've lectured twice in the U.S. -- in the --
18 I think in the past six months -- six, eight months or
19 so. You may have done more. I happened to attend those
20 two, so I'm aware.

21 Has the scientific knowledge on pediatric
22 head injury evolved over the past decade? And I think
23 you have said it has, and I'd like you to identify a few
24 of the key findings -- or the findings that you have
25 found to be most significant and have they changed any

1 of your own views?

2 A. Very much so. I was regularly diagnosing
3 shaken baby syndrome, for example, until about 1998,
4 1999 when I became aware of the study that Jennian
5 Geddes, who is a neuropathologist in London, was doing.
6 And she had put together a group of some 53 babies who
7 had been subjected, she thought, to nonaccidental head
8 injury. And she said these babies do not have traumatic
9 axonal injury. They have brain swelling due to
10 deprivation of blood and oxygen supply. Those that do
11 have traumatic axonal injury were a very small group,
12 about a third of the babies in her group. She looked at
13 children up to, I think, two or three years of age, but
14 certainly under 12 months of age, they had a specific
15 pattern of damage in the medulla, in the brain stem
16 where axons were torn. That was a very small
17 subpopulation, but she said mostly these babies don't
18 have brain trauma. And that made me think, and it made
19 me go to the literature, and it made me read, and it
20 made me very doubtful about what I'd been reading about
21 whether shaking, in particular, could cause this sort of
22 injury.

23 Now, shortly after her publication, which
24 finally it was published in 2001, a radiological study
25 looking at scans of babies thought to have axonal injury

1 confirmed the pathology and said, yes, we're seeing
2 hypoxic injury, we're not seeing traumatic injury in
3 these babies. And then just in 2008 a sub -- a study of
4 babies with -- thought to have -- they called shaken
5 baby syndrome showed that they couldn't actually
6 distinguish between traumatic and hypoxic axonal injury,
7 and came to the conclusion that traumatic injury in
8 young infants is extremely rare. And that concurs with
9 my findings. So that was the first thing that really
10 changed my view in that the pathology just didn't
11 support this is traumatic injury, unless one could show
12 quite clearly that there were stretching and tearing of
13 the nerve fibers in that part of the brain where shaking
14 would be expected to cause some sort of injury.

15 Since that time there have been many
16 studies which have tried to produce that injury in young
17 babies. Obviously those studies can't use babies.
18 There have been animal studies and models. So the sorts
19 of models that are used -- in developing safety in
20 transport, car safety, air safety, sport safety,
21 biomechanics, which is a very much bigger science in
22 this country than it is in the United Kingdom. They
23 have taken dummies, crash test dummies, and they've
24 subjected them to shaking and to impact. And they've
25 shown that shaking causes the -- the forces you can

1 generate by shaking are 50 times less than the forces
2 you can generate by an impact. And something like 20
3 times less than the forces of even a 1-foot drop which
4 is absolutely counterintuitive. It's something you
5 think this can't be true, babies fall over all the time.
6 They fall off things all the time. Surely that can't be
7 true. But that's what the forces are that's been
8 measured. And that is an objective measure of force.
9 It's, I think, undeniable that simply using a simple --
10 that the forces are greater after a short drop than
11 after shaking. And, in fact, when I went through the
12 literature I found that even in 1988, Tina Duhaime,
13 who's a neurosurgeon in the United States who's written
14 a lot on this subject, wrote a paper saying, we do not
15 think that shaken baby syndrome is appropriate because
16 we can't show by our clinical studies or by our
17 biomechanical studies any evidence to support it. We
18 think it's a misnomer. All of the babies they studied
19 who had shaken baby syndrome when they came to autopsy
20 had evidence of fractures and bruises. And their
21 biomechanical tests showed that shaking was 50 times
22 less force than impact. That happened in 1988.

23 And in 2009, the American Academy of
24 Pediatrics put out a position statement saying we don't
25 think we should be using the term shaken baby syndrome

1 any longer, because it implies a mechanism that we can't
2 substantiate. So we have to think again and call this
3 nonaccidental head injury. So it may be head injury,
4 may be inflicted, but it doesn't necessarily occur by
5 shaking. We have to rethink this.

6 Q. Okay. And so is the differential diagnosis
7 for -- I don't know if it's the same in England, but
8 it -- here it was known as a triad, subdural hemorrhage,
9 retinal hemorrhage, you've explained that those are
10 actually linked, and brain swelling, also linked. Has
11 it moved from being suggestive or diagnostic of shaken
12 baby syndrome to a much broader range of possible
13 causes?

14 A. Well, it's -- it was tried in the -- in the
15 appeal court in England. In 2005 four cases were tried
16 and the judges recommended that the term may be
17 indicative of nonaccidental injury, but it was not
18 diagnostic.

19 And I think that if you see this trial of
20 findings, it's absolutely crucial that you look for a
21 list of differential diagnoses.

22 Q. And would those include natural causes as well
23 as accidental in that?

24 A. They do. In my own practice I think the
25 commonest cause is some sort of impact, either from an

1 inflicted impact or from a fall or an accident. The
2 second most common is the existence of a chronic
3 subdural hemorrhage which hasn't been recognized
4 previously but has shown itself by rebleeding and
5 causing symptoms. The third most common group are all
6 of the uncommon things put together in one group, the
7 ruptured aneurysms, the malformations and so on, all of
8 those. And I think that's -- that's -- of course, in
9 our problem group -- sorry -- I should add the metabolic
10 diseases and coagulopathies. And then after that -- oh,
11 there's asphyxia.

12 Q. Yes.

13 A. Hypoxic ischemic injury and asphyxia, of
14 course, which is one of the more common causes.

15 Q. And in your opinion, out of those three
16 groups, into which group does this case fall?

17 A. Well, I don't think the baby actually had the
18 triad on admission to hospital. She certainly had
19 retinal hemorrhages and she had brain swelling, but
20 there was no evidence of a subdural hemorrhage on that
21 first scan. So she would have to be squeezed in because
22 she had subarachnoid bleeding, and I would think after a
23 period of 30 minutes of hypoxia, that would explain
24 everything.

25 Q. I see. So you really don't feel that you even

1 need to do the impact type differential on this or it
2 falls to the bottom of the list?

3 A. I certainly do need to do the impact
4 differential, because bruises were found on this baby
5 when she was admitted to hospital and that's very
6 powerful. But there were no fractures, and I think
7 that -- it's not my expertise to do so, but it needs to
8 be -- the timing of those bruises needs to be examined,
9 because if they were brown, that would suggest they're
10 old. But again, this isn't my expertise. That's -- it
11 raises huge red flags in my mind when it says bruising,
12 but it's not for me to identify the timing and the
13 significance of those bruises.

14 Q. Okay. And if those were brown -- let's just
15 assume that they're more than -- that they occurred
16 earlier than the 40 minutes in which Mr. Lopez had the
17 baby. Would we then be looking for either impact or
18 other causes of those bruises in the time period before
19 he had the baby?

20 A. Well, yes, we would be looking for impact,
21 because that's the most common cause of bruising. But I
22 was also struck by his repeated description of spider
23 bites in this baby. I don't know anything about spider
24 bites. Thank goodness we don't have poisonous spiders
25 or biting spiders, as far as I'm aware of, in England,

1 but that's something that I think should be taken
2 seriously. It was absolutely there in his mind that
3 this baby was ill following the spider bites.

4 Q. Okay. Just my final question. Any
5 indications that you see in the brain slides, CAT scans
6 or other medical records that this child died from head
7 trauma?

8 A. No.

9 Q. And if we're going to accept the State's claim
10 that she did die of head trauma, what would be the time
11 period that we should look on -- that we should be
12 looking at for the trauma to have occurred?

13 A. Well, that's a very difficult question,
14 because we know that after trauma babies don't
15 necessarily collapse immediately. There can be what's
16 called a lucid interval, and Dr. Sunderland gave us some
17 very good examples from his clinical practice, and
18 that's because the brain doesn't swell immediately in
19 all babies. It's very variable. Some babies get very
20 rapid, very acute lethal brain swelling, and other
21 babies have a curve, the sort of curve that goes up
22 slowly and then suddenly decompensates. So there could
23 have been a period of time between trauma and collapse.
24 It could have been up to days, even. There are
25 certainly lots of reported series whereby it will be

1 days before a baby will present to hospital after head
2 injury. So I think that the most -- the most
3 significant evidence has to be trying to find timing of
4 those bruises. That's the only objective evidence of
5 trauma that we have.

6 Q. And did you see in the autopsy report any --
7 any histology on those bruises?

8 A. There was discussion of the one area of fresh
9 bruising. It didn't say where it came from, but my
10 understanding from the interaction that's gone on since
11 that is that it may have been from the subscalp region
12 in the middle of the back of the head.

13 Q. And that's the one that you thought would have
14 arisen in the hospital from lying on the back for 60
15 hours?

16 A. That's the most common cause that I see.

17 Q. So we would expect the bleeding in that area
18 to be fresh?

19 A. Yes.

20 MS. KIRKWOOD: Okay. Thank you. That's
21 it.

22 THE COURT: Doctor, what word did you
23 just use to describe the delay? Illucid --

24 THE WITNESS: A lucid interval.

25 THE COURT: Lucid interval. Okay. Two

1 words.

2 THE WITNESS: Two words.

3 THE COURT: Okay. Let's take a 15-minute
4 break.

5 MS. KIRKWOOD: Thank you.

6 (Recess taken)

7 (Open court, Counsel and Defendant
8 present, no jury)

9 THE COURT: All right. We're back on the
10 record. Counsel, your witness on cross.

11 MR. MURPHY: Thank you, Your Honor.

12 CROSS-EXAMINATION

13 BY MR. MURPHY:

14 Q. Good morning.

15 A. Good morning.

16 Q. Welcome to Amarillo.

17 A. Thank you.

18 Q. I don't know -- how long a trip it is from
19 England, but it's a while, is it not?

20 A. About 18 hours to get here.

21 Q. Yeah, that's -- I've done that. A little
22 tiresome.

23 I -- let me start off with -- I don't
24 pretend to know medicine. I don't even pretend to come
25 close. And so a lot of my questions, if they seem

1 nonsensical, don't be too surprised, but when I put --
2 my perception on it is this. When -- when you tell me
3 about things and when you explain things medically, then
4 my logic kicks in but my logic kicks in without knowing
5 a lot of other things that you might know, so kind of
6 bear with me on that. But I've -- I've got some general
7 feelings now that we've been going about four days about
8 this issue.

9 First of all -- and it really makes sense
10 to me and I think I've got it right, but first of all,
11 we've been talking about -- a lot about differential
12 diagnosis --

13 A. Yes.

14 Q. -- which -- and correct me if I'm wrong. That
15 simply is where we have a phenomena, a bleed or a bruise
16 or an injury. Now, there could be -- the differential
17 diagnosis is there could be many reasons and many
18 causes, and then we start to opt out those reasons for
19 medical -- based on medical information and
20 understanding and learning that y'all have. Is that a
21 fair --

22 A. That's absolutely right. So in any case where
23 you have the -- the patient with the disease or the
24 phenomenon, as you say, you have to look at the whole
25 range of possibilities and then whittle out the ones

1 that don't apply and narrow it down to the ones that
2 could be possible in the case. And every case is
3 different and every case is fact specific.

4 Q. Okay. And when -- at -- now, another thing,
5 and I've discussed this with the other medical
6 personnel, both -- for both sides. About any time that
7 I talk to a doctor, it's pretty clear that our roles --
8 your role and my role -- I'm a prosecutor. And so I
9 question facts. I -- I'm forced by my position to -- to
10 not take anything at face value. A doctor does not --
11 is not necessarily required to do that and shouldn't be
12 asked to. What they need to do is gather the data and
13 then utilize the data. Now, if the data changes, it
14 should be conveyed to you and then you can rethink your
15 situation. Is that a fair assessment?

16 A. Absolutely right. Because the place I'm
17 likely to trip over is more than anything else, when the
18 police come to me and say, here's the brain of a baby
19 who died yesterday. I write a report and then six
20 months later, I get to go to the state court and they
21 say, oh, just to tell you, we found out all of this
22 since then. So you have to know that your
23 interpretation of the findings will depend on the
24 surrounding evidence.

25 Q. Okay. And then where the logic comes in is --

1 if I were to put it -- again, taking it just a step
2 further, it's really nice if the medical conclusion,
3 based on the medical learning and facts that you can
4 determine, I think this comes from medical records and
5 testing and things like that, and the facts as you
6 understand them from lay people, if it all makes sense
7 together, that's the optimum situation and we reach a
8 diagnosis?

9 A. Yes.

10 Q. If we have problems in any of those areas, if
11 this doesn't fit with this, now we start to worry about
12 the conclusion down the line.

13 A. Yes.

14 Q. Agreed?

15 Now, let me characterize, if I can -- and
16 this is -- I'm trying to do this in a -- in a
17 layperson's sort of a way. But here's -- here's what
18 I'm hearing. We have things such as -- let's take the
19 DIC, the coagulopathy, elevated PTT, those types of
20 things. Those things, when we start with a differential
21 diagnosis, include trauma?

22 A. They do indeed, yes.

23 Q. All of them. So one of the possibilities is
24 trauma. And the trauma -- of course, the -- I guess the
25 prosecutor side, the doctors back then and still today

1 maintain that they think the sequence of events says
2 trauma. On the other hand, you and -- and some of the
3 other doctors that are appearing for the Petitioner,
4 you're taking events of the -- the same events in
5 many -- in many places, your interpretation, you're
6 saying that you can eliminate trauma and you're going to
7 disease or something disease-like. Is that -- how --
8 how close am I on this?

9 A. Well, I think -- I don't think any of us can
10 say we can eliminate trauma absolutely. We can't do
11 that, honestly. But we're saying that the kind of
12 trauma that we have is probably too soon and not
13 sufficiently severe to account for the kind of clotting
14 problems that we saw. And yesterday certainly when
15 Dr. Wilson was giving evidence, I think he said, yes,
16 when you have a lot of brain damage you get clots from
17 the brain going into the blood and causing clotting.
18 Well, that brain damage just wasn't to be found in this
19 case. So it wasn't the brain trauma that caused it.
20 Whether it was bruises, I don't know, but it would be
21 extremely unusual, because I've looked at quite a lot of
22 babies --

23 Q. Right.

24 A. -- who've died with severe trauma and I've
25 never seen one with clotting studies like this.

1 Q. One of the problems that I have as a layperson
2 is that when I deal with someone of your stature and,
3 quite frankly, Dr. Sunderland, and the ones that are on
4 my side, because I hold them in as high esteem -- I
5 mean, I no more know for sure about their approaches and
6 diagnoses as I do yours. But they come back at me, you
7 know, with the same sort of analysis, if you will, with
8 regard to why they believe it's trauma and not the
9 disease. And so -- and that's really the issue we're
10 here on for -- for the Judge and for the appellate
11 courts. You agree with that?

12 A. Of course. That's the issue in this case, was
13 there trauma or not.

14 Q. Okay. Now, one of the things that strikes me
15 is this. And I know that there's a lot of -- there's a
16 lot of technical in there. There's a lot of -- there's
17 the slides -- the slide cuts and things like that. And
18 then there's just the natural understandings of the --
19 of the laboratories that are coming out. Now, for
20 everything that you've said to me -- or to the Court or
21 that I've read in your reports, I'm getting the same
22 sort of a feel, and I -- I must say it's similar to what
23 I get from the other side, but I hear a lot of it -- it
24 could be. It may be. It's not a definitive it is --
25 for instance, pneumonia. I don't hear that it is

1 pneumonia to cause -- that caused the coagulopathy
2 disorder which led to DIC. I don't hear that. I hear
3 that it could be connected. That it could have pre --
4 if it preexisted we need to look at that. That's what
5 I'm hearing a lot. Is that a fair statement?

6 A. Yes. And that's for a very good reason,
7 because it's very, very uncommon in medicine that we can
8 say this is definitely the cause of this. As you say,
9 we have a differential diagnosis for most things, and
10 for me to say I know that this is the cause of the brain
11 swelling or I know this is the cause of bleeding would
12 be disingenuous, because I don't. But what I can say is
13 in similar cases I've seen this. In similar cases I've
14 seen that. I've read this literature and this is my
15 synthesis based on the best evidence I have to work to
16 that diagnosis. So it's very rare that we can say that
17 yes, we are certain.

18 Q. And that's pretty much both sides would have
19 to admit that to a -- to a point. Would you agree with
20 that?

21 A. I absolutely agree.

22 Q. Okay.

23 A. If somebody, for example, had found -- done a
24 culture of the blood and found an infectious organism or
25 if they found a snake -- spider venom --

1 Q. Right.

2 A. -- then, yes, we know --

3 Q. Right.

4 A. -- because it's clearly consistent. But we
5 don't have that definitive facts, so we're having to
6 work and make the best fit with the evidence we have.

7 Q. And in fact, in the areas -- one of the
8 problems that I have is in the areas that we're talking
9 about today, it is my understanding that first of all,
10 these areas are evolving and they're evolving through
11 different people's analysis, they -- sometimes there's
12 statistical analysis. There's no scientific way to
13 shake babies and determine these things, so we're --
14 we're doing biomechanical stuff and we're doing a
15 variety of other things, but there is still a big
16 disagreement in -- in your -- I want to say industry --
17 or your discipline, because I know that you go to
18 seminars and I don't know what else we can -- these --
19 these different medical meetings where there's two
20 camps. There can be two camps. And you're a member of
21 one camp, and many of the people that I've talked to may
22 or may not be the member of the other camp. Is that
23 fair to say?

24 A. That's absolutely right. Yes.

25 Q. Okay. You talked -- I know that you know

1 Dr. Leestma. Is that correct?

2 A. Yes.

3 Q. Don't you know him personally? I mean, you've
4 talked to him about --

5 A. I've met him at meetings.

6 Q. At meetings? And Patrick Barnes. I don't
7 know if you've met Dr. Patrick --

8 A. I know Patrick Barnes.

9 Q. Is he a radiologist?

10 A. That's right, yes.

11 Q. Radiologist. And then there's some other
12 names. Who else am I thinking about? Oh, Dr. Plunkett?

13 A. I know Dr. Plunkett, yes.

14 Q. Dr. Plunkett. I don't know -- do you know
15 Dr. Peter Stephens?

16 A. Yes, I do.

17 Q. Dr. Uscinski?

18 A. Yes, I've met them all at meetings.

19 Q. Okay. And they go to the same types of
20 meetings and it would -- we have to say, pretty much,
21 their opinions and your opinions seem to be revolving
22 around each other so that you-all are kind of in a camp
23 for one side, and apparently the doctors that I've
24 talked to and that have supported this side of the case
25 from the -- early on, they're in the other side of the

1 camp. And that poses a problem for a layperson such as
2 myself or the Judge. You understand that?

3 A. I do, and it -- it poses a problem for all of
4 us. And as I mentioned earlier, I've crossed from one
5 camp to the other --

6 Q. I understand.

7 A. -- about ten years ago. And this year I went
8 to Jackson Hole to a meeting on abusive head trauma in
9 children, which was run by somebody who's a very strong
10 protagonist of shaken baby syndrome. And I went in
11 order to say I've done two research projects here and I
12 want to present the results to you, because I think
13 these are important and they inform our understanding.
14 So please can we look at them, I'd like your opinions.
15 Am I crazy? Am I off the wall? Or do you think there's
16 basic research that can help us in our understanding.
17 So for that reason I'm very anxious that we shouldn't be
18 in two camps. We should be talking to each other. We
19 should be in scientific conferences exchanging
20 information. There's no point in standing in two camps
21 and chunking bricks at each other. We're not going
22 forward. We've got to get together and do research and
23 collaborate and find out what the truth is.

24 Q. Right. From our standpoint -- see, I have
25 to -- I have to go -- I can't -- I could never put

1 someone in jail, for instance, on what may be, what's
2 possible. You know, in other words, I always have to go
3 behind and get to the specifics. I always have to
4 question the reliability of the information. And one of
5 the things that I -- the thing that I do most is not in
6 the expert field. It's in the trial work dealing with
7 human nature and looking for motives for saying things
8 and everything. And one of the motives, you know, that,
9 of course, a prosecutor always takes is that the
10 information from the accused should be looked at as
11 information from the accused, and I think you've
12 addressed this a little bit with the 911 call. You find
13 some validity because it has some criteria that you
14 think rings true?

15 A. It's -- for me, it's simply a piece of
16 information. It's a document of a recorded call at the
17 time.

18 Q. Uh-huh.

19 A. So this is something -- and again, I -- this
20 is way out of my field, but it's not evidence that could
21 have been the result of talking to people or collusion
22 or plea bargaining, whatever. I mean, none of that
23 stuff comes into it. This is -- this is what happened
24 at the time of collapse.

25 Q. Okay.

1 A. So for that reason, it seems to me a fairly
2 pure form of information.

3 Q. I understand. Now, I'm going to test the
4 validity of it in my job. You understand what I'm
5 saying?

6 A. Absolutely.

7 Q. And so the first thing I would ask you is do
8 you know who made that call?

9 A. Well, the transcript has the initials of
10 Mr. -- Mr. Lopez.

11 Q. Right. It was the Defendant. Okay. And are
12 you aware of where the history that you rely upon came
13 from with regard to the 66 hours? And I -- I -- I keep
14 referring to 66 hours and -- so let me ask you this.
15 Are you aware that the -- the -- the facts that we had
16 starting early and coming clear to today is that this
17 baby was brought to the caretakers, that would be
18 Mr. Lopez and his wife, DeAnn, at 4:30 on Wednesday
19 afternoon, October 25th, the year 2000. The baby is in
20 extreme condition and headed for the emergency room, I
21 don't know, 10:30, 11:00 on Saturday morning. And
22 that's where I'm kind of getting my 66-hour range. Are
23 you aware of that -- of that particular --

24 A. I've read that.

25 Q. Okay.

1 A. But as I said earlier, I don't know whose
2 evidence is reliable and isn't, and you intimated
3 yesterday that some of the evidence was changing. Some
4 of the witnesses were changing their evidence. So I've
5 just taken what's recorded here, and subsequently I -- I
6 haven't gone back to anything prior to this except for
7 that one doctor's report on the 12th of October.

8 Q. Well, let me give you an example of some of
9 the things that I -- that I -- that raise in my mind
10 some verifications of accuracy, for instance, on things
11 that every -- every doctor -- both sides have taken it
12 into consideration and on -- on y'all's side, the -- the
13 black, tarry stool is -- is taken into consideration and
14 I keep hearing that there must have been bleeding in the
15 upper GI tract. Is that --

16 A. Well, not -- not even in the upper. In the
17 GI -- probably the lower GI tract.

18 Q. Okay.

19 A. Or in the middle in the small intestine.

20 Q. Okay. And see, there again, I think everybody
21 else has said upper, and so I say upper, but it could be
22 either is basically --

23 A. Well, we can almost -- almost certainly
24 exclude the upper GI tract, because it was opened during
25 autopsy and it was described right the way down into the

1 stomach, so there was no evidence of bleeding there.

2 Q. Okay.

3 A. So then we need to look from there on down.

4 Q. To the GI tract?

5 A. Yes.

6 Q. Now, one of the things that was brought to my
7 attention -- and this -- again, this is not medical.
8 This is kind of practical. I'm just trying -- because I
9 don't know if I'm messing up. But how much bleeding
10 would it take to turn the stool black and tarry? I
11 mean, is it -- are we talking about, oh, it's trickley,
12 or are we talking about a substantial amount of blood to
13 make the whole stool black and tarry?

14 A. A considerable amount. I mean, the amount it
15 would require, you know, in an adult and a child are
16 very differently obviously, but one of the problems in
17 diagnosing cancer of the bowel is that you often don't
18 see blood in the stool even though it's there. So you
19 need to do special tests to look for it.

20 Q. Right.

21 A. So it can be possible to be passing small
22 amounts of blood in your stool without having any idea
23 at all.

24 Q. It wouldn't change the color?

25 A. No, not necessarily.

1 Q. Okay.

2 A. So it's going to be quite a large amount of
3 blood --

4 Q. Okay.

5 A. -- to make the stools black and sticky.

6 Q. Okay. Now, that was what was portrayed to me
7 and so -- and so I wanted to be sure about that, because
8 here's the next question. I would assume if it was a
9 substantial amount of blood in the stool, there would be
10 differential diagnoses for what could cause that. Can
11 you tell me -- and I may be jumping ahead, because I
12 don't know if we ever got there, but can you tell me
13 what those might be?

14 A. Oh, I -- you'd need to ask a pediatrician,
15 clinician.

16 Q. Okay. All right. So if I talked -- a lot of
17 times, too, that's another problem I have. You -- you
18 folks are so specialized sometimes that you say
19 pathologist, I get a picture. You say neuropathologist,
20 you're messing me up. Okay?

21 A. I'm so sorry.

22 Q. Okay. So -- exactly what roles and how far
23 you're going to speak I leave to y'all, because I don't
24 want to cross over into your different disciplines. But
25 a pediatrician -- a clinical pediatrician, one that's

1 going to be handling babies. Right?

2 A. Yes.

3 Q. Would be a good resource, I'm assuming, then,
4 to say, okay, diagnostically, you know, what are these
5 differentials, because if you found a baby bleeding
6 heavily, enough to turn the stools completely black,
7 what would we be looking at? That's who I'd talk to?

8 A. Yes.

9 Q. Okay. The -- the next thing that I would ask
10 you is this. And, again, I may be back at the
11 pediatrician level. It would -- it would appear to me
12 that if it's bleeding that heavily, there's got to be
13 something that we would be able to open and see if we
14 looked at that tract -- you know, I don't know if -- for
15 us, obviously cuts and tears, but lesions or -- there's
16 going to be some condition in the skin or something that
17 would be very apparent if we open it up and see that.
18 Would you agree?

19 A. You should see probably little -- little tiny
20 red points of bleeding at autopsy.

21 Q. Okay. Would it be -- do you have to dissect
22 and get to slides or would it be also --

23 A. It would be nice to do that, because then
24 you'd have even more information, but at least --

25 Q. Sure.

1 A. -- at autopsy, it's -- we have 22 feet of
2 bowel, it's -- you've got to cut it all open and wash it
3 all and look at it.

4 Q. And then look at it?

5 A. And it's smelly and it's unpleasant.

6 Q. Hadn't thought about that, but I appreciate
7 that.

8 A. That's why I'm a neuropathologist, brain
9 specifically.

10 Q. You're going to stay up here away from that?

11 A. But now I read thousands.

12 Q. I hear you.

13 A. But I -- I don't know if that was done,
14 because it wasn't recorded in the autopsy.

15 Q. Right. In order to find that out, I'm going
16 to have to talk to the forensic pathologist?

17 A. Yes, indeed.

18 Q. And there again, we've got a forensic
19 pathologist, a neuropathologist, a clinical pathologist,
20 and I guess what I'd like to do is kind of touch on --
21 on that. A forensic pathologist has always been, in my
22 mind, someone who has to be not specifically and in the
23 depth of you aware of the neuropathology, but they
24 certainly better be aware of it if they're going to
25 start looking at the different differential diagnoses

1 and decide if they need to go higher or more specific.

2 Is that fair to say?

3 A. Yes, indeed.

4 Q. And, in fact, the forensic pathologist better
5 be -- better have a little -- a little broader
6 expansive -- they're not specializing in it, but they
7 better know some things in case they need to go look or
8 whatever?

9 A. Absolutely, yes.

10 Q. Okay. And they deal with -- with
11 predominantly things that are going to end up in a court
12 of law. That's why we call it forensics. I think the
13 most common is like in criminal law, because we have a
14 lot of -- of -- in many homicides or injuries, but there
15 could also, I guess, be forensics in a -- in an accident
16 sort of way. Right? A civil case.

17 And if I understand clinical pathologists,
18 this is someone who has a job maybe at a hospital and if
19 it's just -- you know, somebody's brought in, they're in
20 the hospital for a few days and they die, and we have
21 some questions, they might be asked to do autopsies for
22 these unknown issues.

23 A. That's right.

24 Q. Is that right?

25 A. Yes. Yes.

1 Q. Do they also -- does the clinical pathologist
2 also do some of the tissue testing or biopsying or is
3 that a different --

4 A. No. That's -- they do the same thing.

5 Q. The same thing?

6 A. In fact, in -- in England now we have a system
7 for all baby deaths that we have both a pediatric
8 pathologist, the clinical pathologist you mentioned, and
9 a forensic pathologist doing the autopsy together. So
10 the forensic pathologist can say, well, I know all about
11 patterns of bruising and I know all about fractures and
12 I know all about poisoning, and the pediatric
13 pathologist is the one who would say, I know about blood
14 disorders, I know about leukemia, I know about
15 infections, and the general pathologist is the one who's
16 more interested in the diseases and natural disease and
17 causes of death. And so together we have the input from
18 both sides.

19 Q. It's an eclectic approach basically?

20 A. Yes.

21 Q. You know, we have to get everybody kind of
22 involved. Now, there has been a lot of talk about DIC
23 and coagulopathy disorders. And I've gotten -- you
24 know, I don't come to these totally unprepared, but I
25 come prepared in the sense of a layperson. And there is

1 a thing called a hematologist?

2 A. Yes.

3 Q. Now, a hematologist is what?

4 A. He's a person who looks at diseases of the
5 blood. So that would include things like leukemia, but
6 it will also include looking at clotting, why blood
7 clots and why it clots abnormally and does all these
8 blood tests that we've seen in this baby to see if the
9 blood --

10 Q. In this instance --

11 A. -- is a blood clotting disorder.

12 Q. Sorry. I didn't mean to cut over you there.

13 A. That's all right.

14 Q. This lady right here is going to beat me up if
15 I do that.

16 So -- in this instance there are issues of
17 the blood clotting, how it occurs, what it looks like,
18 what we would see -- for instance, in an autopsy -- and
19 you've done autopsies. Am I correct --

20 A. That's right.

21 Q. Have you done autopsies on people -- and I
22 know it's neuro, but have you done autopsies like the
23 whole anatomical -- are you a anatomical pathologist as
24 well?

25 A. I do have to do the whole autopsy, yes.

1 Q. Okay. Okay. Then I guess my next question
2 is, have you done it where a person had a blood -- you
3 know, a coagulopathy disorder, a blood problem of some
4 sort to the point of DIC, which as I understand it, is
5 actually both kind of working against each other inside
6 the -- inside the vascular system? Is that a --

7 A. Yes, I've done that sort of autopsy.

8 Q. Okay. And is that a fair characterization of
9 DIC? I've been told that the blood's clotting and
10 the -- and there's -- it's kind of going back and forth.
11 There's -- there's free bleeding which is contra to
12 clotting, but then there's clotting inside and somehow
13 they're related and they -- the one makes the other one
14 clot and then the clot makes it free bleed and -- you
15 may know more about that.

16 A. Yes. You've got this sort of stock of
17 different chemicals in your blood which are ready to
18 make your blood clot.

19 Q. Okay.

20 A. When you -- when you break a blood vessel,
21 when you have an injury, you want the blood to clot to
22 seal off the wound.

23 Q. Right.

24 A. So as soon as it's exposed to the factors
25 outside, then it will make a clot.

1 Q. Okay.

2 A. But when the vessels are all intact in the
3 normal situation, it's stopping the blood from clotting.
4 It's there -- they're all there. So there's a balanced
5 number of these agents. So if something goes wrong and
6 they're all consumed, they're all used up making clots
7 in the blood system, then if you have an injury, if a
8 vessel gets damaged, then blood will flow out because
9 you've used all your store of --

10 Q. I see.

11 A. -- coagulating factors. They've all been
12 making clots inside the vessels.

13 Q. So if -- if the clotting factors, which is the
14 disruption to the system basically, the imbalance, if
15 you will --

16 A. Yes.

17 Q. -- the blood has to flow through our veins --
18 and I'm doing this in layman's terms. But the blood has
19 to flow, so we've got to keep it fluid. There's factors
20 for that. The blood has to clot -- if I were cut, I
21 want a clotting factor, and there's factors for that?

22 A. Yes.

23 Q. If everything's going good they're balanced?

24 A. Yes.

25 Q. If -- if we have a coagulopathy disorder

1 inside of the -- of the vascular system -- and it can be
2 caused by trauma?

3 A. Yes.

4 Q. It can be caused by -- there's a -- a big
5 differential diagnosis for the cause. But if we have
6 that, it's clotting, so it's using up its clotting
7 factor, the rest of the blood is still trying to flow,
8 and if you have a puncture or a cut, it's used up its
9 clotting factor, so you can also have free bleeding?

10 A. Yes.

11 Q. Okay.

12 A. Could I add one more thing?

13 Q. Please.

14 A. You've made it far too simple. I want to add
15 another level of complexity.

16 Q. I'm good at simple.

17 A. Well, then let's make it difficult.

18 Q. Okay.

19 A. I think there's one other thing that needs to
20 be added here. And I -- again, this is outside my
21 field, but I think Dr. Sunderland mentioned it, and
22 that's there could be another pathology operating. And
23 that's when the red blood cells -- you know, in our
24 blood we've got fluid, we've got white cells which fight
25 disease and we've got red cells that carry the oxygen

1 for us. They can start to just break down and they
2 dissolve. They lyse. So hemolysis is another factor
3 which may have been going on, and Dr. Sunderland
4 mentioned this. Now, this is something that I don't
5 understand.

6 Q. Okay.

7 A. There are various things that cause hemolysis,
8 but one of the clinical symptoms of hemolysis is
9 apparently passing blood in the urine. So it discolors
10 your blood. It gets in your urine. It gets in there.

11 Q. I got you.

12 A. So that's something else you must consider,
13 because that was something else that we were told in the
14 911 call. So just one more layer of things that can go
15 wrong in the blood. It's not just clotting and not
16 clotting, but you can also have hemolysis.

17 Q. Okay. I'm kind of interested in the 911 call
18 in this. You said a couple of things. I'm going to go
19 back to the blood clotting, but you raised an issue
20 before I forget. You made a couple of statements on the
21 911 call. And what you just said is that according to
22 the 911 call, there was the report of passing blood in
23 the urine. I -- I don't remember that -- I can -- I
24 don't remember it being that specific from this -- this
25 uneducated caller. And I mean uneducated into medicine.

1 Are you drawing a conclusion from something that was
2 said that gets you there?

3 A. No. Page 5.

4 Q. Uh-huh.

5 A. Okay. But see, last night -- and it looked
6 like she was peeing blood last night.

7 Q. Oh, okay. So they make a -- a clear statement
8 that there was an event the night before where there was
9 passing blood? Okay. Understand, see, that's a --
10 that's a fact that is stated by a person that from a
11 prosecutor's standpoint would be suspect and I'm going
12 to want to go behind that and test that. Does that make
13 sense?

14 A. I mean, I can't test it, because that's not my
15 expertise. It's yours.

16 Q. Exactly.

17 A. But it's just printed and so I've just gone by
18 exactly what was written in the transcript.

19 Q. And that is exactly what I think, you know,
20 doctors should do. I'm not -- again, I'm never --
21 that's not a criticism. That's just explaining the
22 different roles that I have. But my point is, you've
23 actually drawn some of your conclusions from that fact.
24 I mean, it adds to it. You've just thrown in -- I don't
25 even remember what you called it. That red blood

1 cell --

2 A. Hemolysis.

3 Q. Thank you. Okay. And so -- so that -- that
4 is -- do you have any labs that you support that or -- I
5 don't remember hearing that before, but I don't know.

6 A. It's out of my area of expertise --

7 Q. I got you.

8 A. -- but I'm just putting it together with
9 that's one thing, there was blood coming out of her
10 mouth, Dr. Levy wrote down that there had been black,
11 sticky stools, so you've got -- and when she was in
12 hospital, there was blood coming out of the tube.

13 Q. I got you.

14 A. So we've got four different sorts of -- oh,
15 and there was the vaginal bleeding as well or
16 somewhere --

17 Q. Right. Which is another issue again.

18 A. -- somewhere else that someone else can talk
19 about.

20 Q. Yeah.

21 A. But we've got four or five different places
22 where this baby is bleeding very unusually.

23 Q. I got you.

24 A. So that's -- that's my background. I'm not
25 basing any of my conclusions on the pathology of that.

1 It's just setting up the scene for why this baby may
2 have passed.

3 Q. I understand. When you say it in here, see, I
4 don't know if it's in your area of expertise or not, so
5 when you say it, we qualified you as an expert, I'll be
6 honest with you, I take it. That's it.

7 A. I'm going to be very careful to try not to
8 stray off --

9 Q. Okay.

10 A. -- my area.

11 Q. And I -- and I --

12 A. It's not easily done.

13 Q. I'm sorry. And I may ask my questions just
14 for that reason. I want to be sure of where we're at.

15 A. Please.

16 Q. Now -- and so, for instance, the information
17 of black, tarry stools from Dr. Levy, he couldn't have
18 known that from before, because he wasn't with them
19 before. So he must have got that from a caretaker too.
20 Would you agree?

21 A. That's right. In his --

22 Q. Okay.

23 A. In his initial assessment.

24 Q. Okay. So his -- the fact that we got it from
25 him doesn't add validity to it. I've still got to go

1 back, from my perspective, you see, and look -- look
2 back at it. Does that make sense?

3 A. Yes, you have indeed.

4 Q. Okay.

5 A. But yesterday you -- you talked about the
6 evidence that came at trial and so I haven't looked at
7 any of that.

8 Q. Right.

9 A. I just looked at what was there on the day at
10 the time.

11 Q. Well, another thing, see, is in the evidence
12 that came at trial in -- and the workup, I may look at
13 it from a logical, nonmedical standpoint and things
14 don't make sense, so I go question those things, you
15 know. Now, some things may make sense and I still
16 question them, because I want to know how they fit in
17 with the whole picture too. I -- I don't take either
18 side when I get into these. I don't take either side as
19 being absolutely accurate. And -- and I want to go see
20 what corroboration we can get for that.

21 So this is where I'm going back to my --
22 the bleeding disorder. Because as I understand it,
23 and -- and from the testimony I heard, this is -- from
24 all of them, and don't ask me which ones said all this
25 stuff, but from what I understand, everybody agrees that

1 the PTT was 212S, a very elevated PTT. Everybody agrees
2 that that is suggestive of a coagulopathy disorder. We
3 know that something's going wrong in the coagulopathy of
4 this child. Fair?

5 A. Yes.

6 Q. And we know that this child, from everything
7 that we've seen up to this point, we have -- as we get
8 the baby to the hospital, we have some issues of
9 bleeding, which would go in line with a coagulopathy
10 disorder. Some preexist.

11 A. Yes.

12 Q. And they're based -- they're based on the
13 validity or invalidity of a fact -- of a -- of a
14 caretaker's statements. Do you see my problem?

15 A. Yes. Absolutely. Yes.

16 Q. Okay. These preexisting facts, I'm going to
17 test in many ways other than just going on with the
18 medical. Now, you guys can do some things that will
19 either support or -- but you still have to say "may,"
20 because I'm going to go back and I may remove that fact.
21 As a matter of fact, Doctor, in my opinion, I believe --
22 and this is from some talks that I've had with somebody
23 else who came to me and just recently -- I hadn't talked
24 to this person in years, and they changed the facts on
25 me. Okay? Now, don't go there, because it's not your

1 area and I'm not trying -- I just want you to know why
2 I'm making the inquiry.

3 Okay. So let's go on with the
4 coagulopathy deal. It has been characterized by
5 Dr. Sunderland, it's been characterized by virtually
6 everyone from -- at least from Petitioner's side and I
7 don't know how my side is going to come down on it
8 completely, but that this was severe. This was -- I
9 believe Dr. Sunderland says seriously deranged. I think
10 that's how -- how you-all address it there. For -- for
11 us over here, it was the doctors -- I think it was
12 Dr. White and Dr. Stephens and they say it was a serious
13 coagulopathy. This is -- they put it at -- and I don't
14 know what that means medically, but they -- I take that
15 to mean we got a big problem here. Is that a fair
16 characterization?

17 A. Well, I think so. I'm not a hematologist.

18 Q. Okay.

19 A. But my surprise was that I've never read a 911
20 call where there's blood coming out of the mouth.

21 Q. Okay. Let's go back from that. I want to
22 talk about the coagulopathy. And here's why, Doctor. I
23 understand the 911 call and we've heard that and I know
24 that there was the mention of the blood and I'm going to
25 address that factually. Okay? Let's -- I don't care if

1 you assume it was or it wasn't, but I want to -- I want
2 to explore what is being said about coagulopathy
3 disorder so that we can understand it in layman terms
4 and what we should be seeing and what we should be
5 finding medically and -- and factually. For instance,
6 let me go back to this. Would you agree that there
7 are -- that coagulopathy, if noted in some fashion early
8 on, may not be severe, the indications of it may not be
9 real apparent, it may be easy to turn around -- I know,
10 you know, with the infusions, the transfusions and
11 things. But when you start talking to severe, you get
12 a -- you get a medical image of what's going on inside
13 the body. Okay? Tell me what's happening inside that
14 body in those veins if it's a severe coagulopathy.
15 It's -- the PTT's off the chart. What are you expecting
16 to see happening inside those -- the vascular system?

17 A. Well, again, I have to say I'm not a
18 hematologist.

19 Q. Okay.

20 A. So I can't comment and I can't comment on the
21 lab results.

22 Q. Fair.

23 A. But -- but I did also notice from the nursing
24 chart that I don't think I've ever seen a case where
25 blood is coming up the tube. And it's interesting that

1 over the period of the afternoon it was described as
2 frank blood, frothy blood, and then it was blood-stained
3 froth. Now, that's what we see in pulmonary edema. We
4 expect to see that when the baby's lungs have been
5 flooded with water --

6 Q. Right.

7 A. -- you get pink froth. But it wasn't pink
8 froth to start with, and the descriptions are very
9 graphic, that this is changing as the baby is being
10 treated.

11 Q. Doesn't that actually help us with the
12 severity of the coagulopathy?

13 A. Well, it sounds as if it was getting less
14 severe as the afternoon went on.

15 Q. Okay.

16 A. But it started off bad and then it got better
17 because she had all these infusions and platelets and so
18 on.

19 Q. It sounded that way. So at the admission, it
20 was clearly a severe coagulopathy?

21 A. That would be my understanding of the -- the
22 nursing notes.

23 Q. All right. Let me go back and ask you if you
24 have ever done an autopsy where you opened up and looked
25 inside and looked at the organs and the vascular system

1 of an individual absolutely known now, you know,
2 medically, no question about it, they had a severe
3 coagulopathy.

4 A. I don't think I have.

5 Q. You don't think you have? The reason I bring
6 it up is -- my lack of knowledge in this area, is that
7 it's been suggested to me that, you know, if -- the more
8 severe it is the more clots you're going to find in the
9 system. The more severe it is the more easily the
10 bleeding will occur if anything's opened up on that --
11 that person. At the height of the most severe part of
12 the coagulopathy, a cut would bleed far more profusely
13 and free -- free flowing than if it was not a severe
14 coagulopathy. Is that a fair statement?

15 A. Oh, I think so, yes.

16 Q. Okay. Now, it has been suggested to me that
17 coagulopathy -- coagulopathy is systemic --

18 A. Yes.

19 Q. -- throughout the vascular system?

20 A. Yes.

21 Q. The clots could, would and should be in
22 various places where there's vascular system, in various
23 places where there's blood flow through organs; the
24 lungs, the kidneys, the liver, the heart, the brain,
25 any -- the intestines, the stomach, the esophagus, all

1 of those where blood is going to be flowing could and
2 some say would, but all say should have the -- the
3 clotting problems and possibly the free flowing blood if
4 it were a breached area that was -- you know, a vein
5 cut. Is that a fair or unfair characterization?

6 A. Well, I think it's difficult, because it -- as
7 you say, we have a balance in the clotting and the
8 bleeding, and if this were a hemolytic problem and the
9 red cells are breaking down, you wouldn't necessarily
10 see clots. And so you don't necessarily see clots in
11 all the vessels and all the organs in my -- in my
12 understanding, but certainly you would expect to see
13 bleeding -- abnormal bleeding, as we've already
14 mentioned, and I think that might explain the bleeding
15 into the ventricle of the brain.

16 Q. Okay. Let me go there with you. Again now,
17 this is my simple little approach to this and -- and
18 very unsophisticated approach, so bear with me if I'm
19 being ignorant, but you just said that there might not
20 be clots, because the coagulopathy problem, if I
21 understand this right, has really gone over -- it's a
22 free bleeding problem. It's not a clotting problem.
23 Now, we won't know that until I -- how do we tell -- I
24 mean, how do we confirm, either through some test or
25 maybe an autopsy, that it was a coagulopathy problem and

1 a free bleeding only? Is it a --

2 A. I think the analysis of the lab results. A
3 hematological analysis of what those blood results show
4 us.

5 Q. Which again is not your area?

6 A. No.

7 Q. Now, you might -- if they give you a reading,
8 you -- you might -- it might raise your eyebrows to
9 that, but you'd go to the hematologist?

10 A. Yes. Because I look at something and say,
11 this is way up in the sky, but they look at that one and
12 say that one's down, so, you know, there's other ones
13 who can analyze that.

14 Q. Did you get to look at the complete medical
15 records?

16 A. I don't know. I got these records that are
17 here.

18 Q. Okay. And I didn't even go into what you had
19 and I wasn't sure, because I wasn't sure what you got.
20 But do you recall whether you saw any -- I don't know
21 how to say it -- hematological report -- how was that?
22 Pretty good?

23 A. Sounds wonderful.

24 Q. -- that -- that showed you that you -- you
25 should be concerned that it -- that it had moved to the

1 free bleeding side only?

2 A. I -- I wouldn't be able to interpret it.

3 Q. Okay.

4 A. So off my --

5 Q. I need to go to a -- to a hematologist?

6 A. Yes.

7 Q. Okay. Do you know Dr. Wilson?

8 A. I saw him yesterday, but I don't know him
9 otherwise.

10 Q. Okay. Do you recall that he was board
11 certified in clinical pathology -- I hope I get this
12 right -- pediatric pathology, pediatric hematology, I
13 think he said, a pediatrician, and another kind of
14 pathology. There were five -- there were five board
15 certifications on Dr. Wilson. Does he fit into a couple
16 of the categories of the people you'd have to go rely
17 upon some for, you know, the pediatrician, the
18 hematologist, that type of deal?

19 A. Well, it -- it's probably slightly different
20 in England. We would have somebody who was just a
21 hematologist who didn't do all the other aspects of
22 pathology and pediatric pathology, but was just in the
23 lab all the time looking at blood and reading the
24 results.

25 Q. Okay. But you would agree that he is board

1 certified in my country, under my rules, our way, and I
2 don't know what those rules are because I'm not a
3 doctor, but, I mean, he -- he established his
4 credentials from the -- from the bench, too, and did you
5 hear that part?

6 A. No, I didn't.

7 Q. Okay. You'll just have to take my word for it
8 on that.

9 But let's go back again. Let's say
10 that -- because we don't know what happened inside.
11 There were -- there were nonreports, if you will. I
12 think you said that it wasn't reported if anything was
13 found in the esophagus or the -- you know, the different
14 organs in the autopsy that we're dealing with with
15 Dr. McClain. Right? So what Dr. McClain saw with her
16 own eyes would be good to know, wouldn't it?

17 A. Yes.

18 Q. Okay. Now, let's assume then -- let's take
19 two other assumptions. If it was a free bleeding, you
20 would anticipate that while the person was still alive,
21 let's go that, that any kind of cut or opening to the
22 skin and into the vascular system would bleed more
23 freely, would be noticeable as a different free
24 bleeding?

25 A. One would expect it to be --

1 Q. Okay.

2 A. -- so.

3 Q. And so when the child who is supposedly
4 seriously suffering from a very serious coagulopathy
5 dis -- disorder, at least initially noted by a high PTT
6 of 212 is being treated at the hospital, any kind of
7 invasion into the body, we -- we should note some pretty
8 rapid free bleeding -- you know, unusual, more than we
9 would anticipate with somebody not with that problem.
10 Would that be fair?

11 A. Well, again, I'm not a clinician. This is
12 really something that a person who handles babies and
13 treats them would be far better able to answer.

14 Q. Like a pediatrician?

15 A. Or like a pediatrician.

16 Q. A SANE nurse?

17 A. Even an insane one, but, yes.

18 Q. Any -- any medical professional that's
19 handling a baby on site, if they understand, as you do,
20 about coagulopathy, they should notice a -- a disparate
21 free bleeding problem if it's invaded?

22 A. If it's sufficiently there, yes, absolutely.

23 Q. Well, you -- one of my problems is from -- and
24 I'm going back and please bear with me, because again,
25 I'm just using the common sense that I have without the

1 medical knowledge. But you were just talking about
2 you've never seen this free blood back up from this --
3 and I -- it was an ETT. Is that right?

4 A. Uh-huh.

5 Q. What is an ETT?

6 A. Endotracheal tube. It is the breathing tube
7 into the lungs.

8 Q. It's the breathing tube. And the blood is
9 backing up. You've never seen that. Well, that tells
10 me that's an unusual free bleeding situation.

11 A. Yes.

12 Q. Well, and -- and this is a very distinct
13 and -- and difficult, you know, very severe
14 coagulopathy. And so in my limited logical abilities
15 without the medical training, I know it's systemic, I --
16 I kind of am getting the understanding of what it is,
17 and I'm expecting these stories of the bleeding, they're
18 poking this baby, getting blood from the baby, they're
19 putting these IOECBQ (sic), whatever those things are in
20 the legs, they are doing things to this child to keep
21 it -- they're pushing a -- a tube down its throat, which
22 you were telling me that's one of the free bleedings
23 that's concerning you. So when I ask the doctors then,
24 so we should expect this to be a systemic thing, then I
25 get this, well, it depends. And that -- that causes me

1 some problems, because I -- I don't know how it can
2 either be or not be. And we're -- we're switching back
3 and forth on me. May have good medical reason. I'm
4 just making the observations.

5 A. Yeah, and I can't answer your questions. Not
6 all of them. I'm just saying what strikes me as unusual
7 that I haven't seen before.

8 Q. I understand.

9 A. Now, yes, you would expect around all of the
10 puncture sites, that would be bleeding. I don't know if
11 there was or not, because it wasn't described. We
12 certainly have some fresh bleeding on the leg where
13 maybe the intraosseous needle went in. We know that the
14 baby was said to be congested for three or four days
15 before coming into hospital, so maybe the lungs were
16 inflamed. Maybe there was a minor infection and perhaps
17 that's why the lungs were bleeding and we got blood
18 through the tube.

19 Q. Can I ask you a question?

20 A. Yes.

21 Q. How do we know the baby was congested for 66
22 hours before coming in?

23 A. Oh, we don't. We -- we know because Dr. Levy
24 wrote in his admission statement that the baby had been
25 congested and coughing for three or four days. That's

1 again from the admission statement written by Dr. Levy.

2 That's where I got that from.

3 Q. And I assume you know that Dr. Levy wasn't
4 with the child 66 hours before, so he had to get that
5 from the caretakers --

6 A. Yes.

7 Q. -- who I question the veracity of their
8 report?

9 A. Yes. It's a contemporaneous report of the
10 caretaker. I can't -- I have no idea of the veracity --

11 Q. Okay.

12 A. -- of that report. I cannot possibly hope to.

13 Q. Again, I'm not criticizing you, because I'm
14 a -- I'm the skeptic. I'm the guy that's going to
15 question everything. You're the doctor. But you
16 understand, we qualify you up there, you tell --
17 everybody wants to ignore these facts and go back, but
18 then you said, we know. That's what your testimony was.

19 A. Okay.

20 Q. We know. And my question was, so you're back
21 again -- you're going back and -- and introducing it
22 into your considerations and I have to, too. I can't
23 ever take it out. Is that fair?

24 A. Okay. Well, I'm -- maybe I could finish,
25 because what I wanted to do was set out to a reason why

1 there might have been bleeding from some parts of the
2 body and not all parts of the body.

3 Q. Okay.

4 A. And I start with the things that are least
5 close to my expertise, so that is, maybe there was a
6 lung problem so the lungs were a bit inflamed so they
7 bled more easily. Maybe there was trauma in -- in the
8 vagina. As we've heard, that was bleeding. But then
9 when we come to the brain, which is an area which I'm
10 more comfortable to talk about --

11 Q. And understandably so.

12 A. -- we know that there was subarachnoid
13 bleeding. We know there was intradural bleeding and we
14 know there was intraventricular bleeding. Now, all of
15 those areas where the finest, most delicate blood
16 vessels are to be found, so they're the ones that would
17 tend to leak more easily and that's where the bleeding
18 occurred. We don't see very much bleeding in the brain
19 at all, because those vessels are surrounded by brain
20 tissue and they're all well supported. So this is an
21 explanation. I'm trying to explain a hypothesis, which
22 I can't verify, but I'm trying to explain to you why,
23 when you have a systemic disease, it doesn't always
24 affect all tissues, but it affects those tissues that
25 are more vulnerable. And I'm just suggesting why I can

1 explain that in the brain and why in the body it may be
2 that the bleeding was at sites which were already
3 perhaps vulnerable or damaged in some way.

4 Q. Okay. Well, understand when the -- I'll give
5 you another example that -- that's me taking the
6 information I get from doctors and putting my -- my
7 logical take on it. Okay? It's systemic, so -- so if
8 we have this terrible coagulopathy disorder -- which I
9 think everybody says there was this elevated PTT. I
10 don't have a problem with that. I've been told that PTT
11 tells you there's something wrong. It doesn't tell you
12 what it is. Is that a fair statement?

13 A. Back to the hematologist.

14 Q. Okay. Back to the hematologist. But you do
15 know enough about the clotting and the -- and the
16 bleeding. So we have bleeding. Do you remember any
17 clotting information about the brain from the autopsy?

18 A. No. First of all, when I looked at the
19 sections myself, I didn't see any clots within the blood
20 vessels. I didn't see the characteristic picture of
21 DIC. And there's something which isn't absolutely
22 specific, but it leads me to -- to be very suspicious,
23 because I see it on a lot of babies who have been
24 ventilated for a period of time, and you see little
25 clots in the blood vessels and a little ring of bleeding

1 around them. It's quite striking when you see it. I
2 didn't see that. So the diagnosis of DIC was something
3 that, as the neuropathologist, I would have thought, I
4 wonder if it could be something different like a
5 hemolysis, because I'm not seeing that characteristic
6 finding.

7 Q. That helps me a lot. That's the kind of
8 thing, because what you've just said is that in the
9 brain -- if I understand it, and please don't let me put
10 words in your mouth, but is that -- in your assessment,
11 you didn't see in the brain the things that you might
12 associate with DIC?

13 A. That's correct. But I did see things that
14 would associate with a problem with clotting. In other
15 words, there was too much blood.

16 Q. Right. Right. Now, if it had -- a problem
17 with clotting, why -- why did it -- tell me -- I'm not
18 sure I understand that part. You saw things in the
19 brain that said that there was a clotting problem in the
20 brain?

21 A. Well, I saw extensive bleeding into -- or I
22 read about it -- I didn't see, but it in the report, it
23 says there's bleeding into the ventricle.

24 Q. I see. Uh-huh.

25 A. So that means excessive bleeding, more than I

1 would expect to see in babies who are severely hypoxic.
2 And I've seen babies who have been hypoxic for an hour
3 and 20 minutes.

4 Q. Right.

5 A. A really long time before they'd been
6 resuscitated. And it's unusual to see that much
7 bleeding in the ventricles.

8 Q. Was it bright red?

9 A. I don't know. I'd have to look at the post
10 mortem report or the neuropathology report.

11 Q. Well, I --

12 A. The trouble is, by the time the blood could be
13 seen in the ventricles --

14 Q. I got you. Okay.

15 A. -- the brain had been fixed. So it's --

16 Q. I see, so -- okay. I got you.

17 By the time we got the slide -- are you
18 talking about where the brain was removed and fixed?

19 A. Yes.

20 Q. Now -- now it's a little different. What
21 about in the autopsy itself? Do -- and I may be
22 misremembering, but I thought I had a -- I thought I had
23 a memory of the bleeding that was seen in the brain was
24 bright red. I mean, I -- for whatever that means.

25 A. I think that it was described as fresh -- oh,

1 sorry. A thin subdural hemorrhage. I don't think I've
2 got bright red anywhere.

3 Q. Okay. I may be -- there's so much talk that's
4 gone on for the months, but it says the word "fresh."

5 A. Yes.

6 Q. If you were talking about something when you
7 were doing a neuropathology and you saw blood and you
8 said "fresh," what would you mean?

9 A. It's fluid. It hasn't formed clots. It's not
10 got tissue growing into it.

11 Q. Is it red?

12 A. Could be red, could be blueish, depends on how
13 well oxygenated the baby was. The color isn't very
14 helpful at post mortem.

15 Q. Okay. So also -- and you did review the
16 autopsy?

17 A. I did.

18 Q. And -- and so let me talk to you -- I think
19 probably more than anything else, I should talk to you
20 about the brain in a more precise way probably. That
21 would be more comfortable to you. Is that fair to say?

22 A. Absolutely right. Yes.

23 Q. Okay. Okay. With regard to that, we know
24 that you -- you know, that's why that -- the statement
25 about the -- the -- the evidence of DIC that you might

1 be familiar with and that you didn't see, describe it
2 for me again. What was it?

3 A. Usually -- and again, this isn't absolutely
4 specific. It's just my own observation in babies who
5 have DIC, you see little tiny bits of blood clots in the
6 vessels. You can actually see them, a little ring of
7 bleeding around it. It's quite a characteristic
8 finding.

9 Q. And you didn't see that anywhere?

10 A. I didn't see that.

11 Q. Okay. Now -- and the other thing is when you
12 say that -- that -- and this is my logic going again,
13 but when you talk about the -- the bleed in the head,
14 the bleed in the head, and it's fresh, and it's in
15 places where you -- you see more bleeding in places you
16 don't think that you should be seeing it, okay -- we've
17 talked about the blood coagulopathy problem. We don't
18 see clots. Am I right?

19 A. Yes.

20 Q. We have discussed the coagulopathy problem in
21 a free bleeding way, because you're seeing blood come up
22 there. If it's a free bleeding way, what -- would you
23 interpret -- well, I don't know. That's a
24 hematological. Let me -- let me go back to the -- let
25 me go back a different way, because I don't want to get

1 too far off on this.

2 With regard to the bleeding in the head,
3 there -- what is the vascular system? I know about the
4 bridging veins. Are there capillaries? Are there --
5 and I'm just using layman stuff. What all are the
6 vascular system for the brain?

7 A. The blood comes from the heart in arteries.
8 There's big arteries that come up here, the carotid
9 arteries come through the neck, and another system comes
10 through the back. And they come into the head and they
11 form a little network in the base of the brain.

12 Q. Uh-huh.

13 A. That's very important, because it means that
14 blood's coming on two sides. But if you block one side,
15 there's a connection, so it's like -- it's like that
16 thing at Dallas airport, the train going around and
17 round between the terminals, so that if you block one
18 terminal you can take the train around to the others.
19 So the arterial supply at the base of the brain is very
20 important that we have this interconnection to protect
21 the brain. Then the arteries will break up and they go
22 into the brain, some come across the surface and dip
23 into the surface, and the arteries get smaller and
24 smaller until they form capillaries. And these are
25 little tiny vessels that have just one thin, thin cell

1 membrane. You could possibly see it just under the
2 microscope at high power. And that's where all the
3 exchange takes place. The blood's in the middle, the
4 brain cells are outside, and all the oxygen and glucose
5 and things that are going in and the carbon dioxide is
6 coming out, all the waste products have to go across
7 this little thin capillary membrane.

8 Then the capillaries all join up together
9 and they form bigger vessels called venules which become
10 veins. And the veins will drain either up to the
11 surface or into the deep tissues, but most of it comes
12 up to the surface. They join into bigger vessels on the
13 surface which form the bridging veins. They go into the
14 sinuses and it goes back to the heart.

15 Q. Okay. Is this -- is this system going up,
16 like, the sides of the brain or is it all around it
17 or --

18 A. All over.

19 Q. All over it?

20 A. The whole brain is really intensely -- a huge
21 blood supply. Terribly important.

22 Q. Okay. And most of it is very -- it sounds
23 like it's great big, but it's -- they're very small? Is
24 that -- you use it as --

25 A. The really important vessels are tiny.

1 Q. Okay. All right.

2 A. They're the ones where the exchange takes
3 place.

4 Q. Okay. Now, I want to go back, if I can, and I
5 want to talk to you a little bit more than -- in the
6 stand -- from the standpoint of assuming that it was a
7 real severe coagulopathy and you're doing a -- a -- an
8 autopsy -- a more anatomical, the whole body. More --
9 you know, either in your training or your experience,
10 and preferably in your experience if you've seen it,
11 what are -- if you've opened the lungs -- let's say
12 there was a problem of bleeding in the lungs and you
13 opened the lungs, what do you expect to see if there's a
14 severe coagulopathy problem?

15 A. Well, I think you better ask a general
16 pathologist, because I --

17 Q. Okay. Well, I know you're --

18 A. -- take a passing interest, but I don't want
19 to give evidence.

20 Q. You're keener on the brain?

21 A. I'm very much keener on the brain.

22 Q. All right. The reason I asked you about this
23 to make sure whether I could or should. I still should
24 not. Is that right?

25 A. You still should not.

1 Q. Okay. Let me get away from that. I don't
2 want to do that to you.

3 Okay. Let's -- let's go to pneumonia. I
4 want to talk to you about pneumonia.

5 A. Not my field again.

6 Q. Not your field again.

7 A. Still lungs.

8 Q. Not my field -- your field, but you were given
9 information about pneumonia, were you not, in your -- in
10 your -- your workup about some history and what -- what
11 you should know about when you're making your decisions?

12 A. Yes. Dr. Levy had that in his admission.

13 Q. We know -- I don't think there's any dispute
14 by anybody, either side, about pneumonia. There is a
15 dispute maybe in the interpretation of, you know, where
16 it came from, what caused it, how long it had been
17 there, things like that. Have you been made aware of
18 what that dispute is?

19 A. I try not to meddle in that, but --

20 Q. Okay.

21 A. I -- I mean, there's a first chest x-ray here,
22 but -- I looked at that and I looked at Dr. Levy's
23 report.

24 Q. And pretty much I need to move off to
25 something else?

1 A. I think so.

2 Q. I just want you to know, I try not to meddle
3 in that, too, but unfortunately they're making me do it
4 today.

5 Let's go back to the head then. Because
6 see, when you -- when you testified with -- with -- with
7 Ms. Kirkwood, you -- you talked about a whole lot of
8 other things and so I wanted -- I wanted to get there,
9 but the truth of the matter is, if it's not -- I think
10 you're most comfortable, you were talking about, the
11 brain, and all of that other is based upon what you've
12 been told by other people that we probably ought to rely
13 on in their fields. Is that a fair statement?

14 A. That's right. I -- I look at the brain, my
15 training and experience is with the brain, but the brain
16 is not isolated. I've got to look at the surroundings
17 and see what fits in with what I'm finding in the brain.
18 It's like doing a jigsaw puzzle. And we all have to
19 look at our piece of the puzzle, be absolutely sure we
20 understand that, and then we can put it in the puzzle
21 and as everybody is very sure of their evidence, put it
22 altogether, and then we can see a picture.

23 Q. Is there anything about your looking at the
24 brain or the autopsy, et cetera, of a specific medical
25 finding, something that you can put your finger -- not

1 that it's consistent with -- I understand -- you know,
2 that's a -- it can be consistent with lots of things.
3 Right? But not that it's consistent with, but is there
4 anything about the brain structure that you saw and
5 know -- I don't know, from a slide, from the autopsy or
6 something that relates to the issue of -- of pneumonia?
7 Does that cause any effect in the brain or anything that
8 you can study that helps be more definitive in its
9 diagnosis, for instance?

10 A. No. Because all pneumonia -- pneumonia would
11 do would be to reduce the amount of oxygen in the blood
12 and make a baby sick and perhaps predisposed to
13 collapse, but the -- that would translate in the brain
14 to perhaps a little bit of swelling or hypoxia.

15 Q. Okay. Let's talk about that for a minute.
16 Hypoxia ischemia. Lack of blood, lack of oxygen causing
17 damage. Obviously we know if a baby's choked, either
18 cutting off the blood or cutting off the air -- or not
19 just babies, but anybody, it happens in a very short
20 period of time. Brain damage begins. Matter of
21 seconds. I don't know how many, maybe 10 or 15, but not
22 very long. Is that fair to say?

23 A. Well, I think most people say in adults six
24 minutes is the most you can survive without oxygen. In
25 babies it might be a little bit longer because they're

1 programmed to go through birth, but one wouldn't want
2 one's brain to be without oxygen --

3 Q. Not very long. And that's --

4 A. -- for longer than six minutes.

5 Q. I'm sorry. And that's when they die, but they
6 actually will pass out. I mean, they're going to lose
7 consciousness long before that. Is that fair to say?

8 A. Yes.

9 Q. Okay. I've been told that that can occur in
10 10 to 15 seconds.

11 A. Loss of consciousness.

12 Q. I'm sorry?

13 A. Loss of consciousness.

14 Q. Loss of consciousness?

15 A. I imagine so, yes.

16 Q. Okay. The reason I say that, I'll just be
17 real blunt about, and maybe you know about it, is police
18 officers are taught that if they're being choked, the
19 guy has no weapon, all he's doing is choking him, within
20 10 to 15 seconds if they feel like they're fixing to
21 black, that's deadly force and they're allowed to shoot
22 and take the assailant off of them. Do you agree with
23 that kind of assessment?

24 A. It's really beyond my expertise.

25 Q. I understand, but in the head, if they choke

1 off blood and oxygen to the head, an officer can pass
2 out fairly quickly?

3 A. Yes, I'm sure.

4 Q. If they hold that too long, they're going to
5 start causing brain damage after the officer passed out?

6 A. Yes.

7 Q. If they hold it too long, that officer will
8 die?

9 A. Yes.

10 Q. Period?

11 A. Yes.

12 Q. Okay. And everybody's like that. Right?

13 Another thing, when we fly -- you just flew 18 hours.

14 They get up and they give a talk and they say, if we

15 lose pressure, oxygen's gone, a little mask is going to

16 fall down. Pull them out -- I've flown, too, by the

17 way. Pull them out to the extreme -- as far as you can,

18 put it on your face. And then they tell the parents,

19 put yours on first.

20 A. Yes.

21 Q. And then go to the kids. Why do they do that?

22 A. Because you are then safe and you can help

23 somebody else. If you start trying to help somebody

24 else, then maybe you both don't get an oxygen mask.

25 Q. Yeah. You're going to pass out pretty quick

1 without oxygen and they know that, don't they?

2 A. Yes.

3 Q. Are you familiar with the golfer, get up on
4 the Leer Jet, plane lost pressure, this happened a
5 couple of years, three years ago, and we followed that
6 plane for miles. I think it crashed over near Canada,
7 because everybody -- it happened very quickly, the
8 pilots and everybody passed out, they flew for hours.
9 They were dead long before the plane crashed. Were you
10 aware of that?

11 A. No, I wasn't.

12 Q. I'm just -- I'm overkilling the point, but
13 here's the deal. Hypoxia ischemia can be caused in an
14 infant if they're choked?

15 A. Yes.

16 Q. Suffocated?

17 A. Yes.

18 Q. Or even compressed. And by that I mean
19 compression on the chest which impairs their breathing?

20 A. Yes.

21 Q. Would you agree?

22 And that can be -- and that doesn't take
23 very long?

24 A. Yes. If it's complete, yes.

25 Q. Okay. So if that -- tell -- tell the Court,

1 if you would, how long from the point of compression,
2 suffocation, choking or the lack of oxygen from
3 something like that, how long would it take before you
4 started to see evidence of hypoxia ischemia in the
5 brain?

6 A. It's a very good question. I don't know if I
7 can answer it, because we don't usually have that sort
8 of precise information. But certainly I have seen
9 babies who've died on the operating table and been fully
10 resuscitated, but it may have been, say, 40 minutes
11 before they were fully resuscitated and you can begin to
12 see nerve cells dead at that period of time.

13 Q. Okay.

14 A. So within less than an hour, but it's fairly
15 subtle.

16 Q. Okay.

17 A. But certainly brain swelling can occur very
18 quickly. But as I mentioned earlier, brain swelling is
19 not the same in everybody. There's probably a genetic
20 component to how fast your brain swells, and in any one
21 person it's not just a straight line. So the amount of
22 enlargement of the brain and the pressure won't go up in
23 a straight line. So in some people they get brain
24 swelling and they're fine, they're fine, and then
25 suddenly the pressure goes up and they crash very

1 quickly.

2 Q. And causes that problem very quickly. Right?

3 A. Yes.

4 Q. Well, let's say that a -- that the baby has
5 the oxygen cut off, and you said that you would see --
6 start to see -- say the baby dies and you look, you
7 would expect that you would see damage that would have
8 occurred within a matter of minutes? Is that what
9 you're telling me?

10 A. I've -- I've seen changes in the nerve cells
11 in somebody who's survived for 45 minutes after the
12 first collapse.

13 Q. Okay. What is it that -- that -- what is
14 the -- what are you looking at to see the damage? In
15 other words, how is it manifested in the brain that you
16 see it -- it's got differential diagnosis, I assume, but
17 one of them is hypoxia ischemia. Is that fair?

18 A. Yes.

19 Q. Okay.

20 A. We're looking at several things, but one of
21 the things I was just mentioning, seeing nerve cell
22 damage, is exactly what Dr. Wilson was describing
23 yesterday. When the nerves become rather pink in color,
24 the cell bodies and the nucleus in the middle becomes
25 rather dark blue and shrunken. And that's what we call

1 the early stages of necrosis. So that's the cell, where
2 it gets to the point you can recognize under the
3 microscope, that cell's never going to live again.
4 Other cells can look a little bit swollen, and you can
5 see, if this baby had survived, that neuron might well
6 have survived as well. So you look for differences in
7 the color of the nerve cells with the stains that we use
8 and their shape and the amount of swelling. So that's
9 what we can look at in the nerve cells of the brain
10 itself.

11 But the other thing that we see far more
12 commonly and is very important is the amount of swelling
13 in the brain. And that's due to the -- the damage that
14 the lack of oxygen causes to the smallest blood vessels
15 I just described. They start to become leaky and fluid
16 gets out from them and gets into the tissues of the
17 brain and causes it to swell up.

18 Q. What would -- what would be happening to the
19 brain -- if this is a fair question, and I don't know if
20 it is. Say that that lack of oxygen went on for 10
21 minutes. Can you break it down that way or is it -- is
22 that too unfair?

23 A. Well, it -- it's -- it's very difficult to
24 say. From experimental studies, pure lack of oxygen
25 probably won't do very much to you until the lack of

1 oxygen causes your heart to stop and you don't get a
2 blood supply. Because the lack of oxygen might damage
3 cells, but what's even more damaging is that all the
4 time our cells are working they're producing acid and
5 waste products. And those are more damaging than the
6 lack of oxygen. So you need some blood flow to take
7 away those waste products. If you don't have any blood
8 flow, the waste products just back up and kill the
9 cells. So we need lack of oxygen and we need -- I mean,
10 we need oxygen and we need blood flow.

11 Q. Okay.

12 A. So they're both in balance. So I can't really
13 answer your question what would I see after lack of
14 oxygen for 10 minutes because I don't think I see it.
15 And also in this sort of situation, the clinical
16 situation, we never actually see it complete. Because
17 if it was complete cutoff, as you mentioned in the
18 choking situation, you'd be dead.

19 Q. Right.

20 A. These babies who collapse and get resuscitated
21 have got some blood flow, a little heart going very
22 fast. There's some blood flow, but not enough, and it's
23 not taking enough oxygen. So it's suboptimal, but it's
24 not complete.

25 Q. Okay. You -- you -- you heard Dr. Wilson

1 talking about his concern -- you know, that the reason
2 he believes -- part of the reason he believes as he does
3 is that this baby who came in -- I think everybody
4 acknowledges it was coded as it came in, and apparently
5 had been found and resuscitated en route rather quickly
6 and rather handily. You remember that?

7 A. Uh-huh.

8 Q. And because of that, he was having problems --
9 and I'm going to talk about it and just mention an area
10 that I know you're not the expert in, but he mentioned
11 that had this been the severe pneumonia, as they want to
12 maintain, and had it preexisted, that he does not feel
13 they would have been able to resuscitate that baby to
14 the degree they did even before getting to the hospital,
15 and in the manner they did. Now, I don't know if you
16 have an opinion whether you agree or not with that, but
17 do you have an opinion on that or should you have an
18 opinion on that?

19 A. Well, all I will say is I think it's difficult
20 to assess that, because I don't think the baby did
21 survive very well, because the baby survived the 30
22 minutes and was then artificially supported and the
23 brain was completely wrecked.

24 Q. I understand. But he didn't say survived
25 well. He said they were surprised -- he felt like if

1 the lungs were to that degree to cause that, that that's
2 going to prohibit resuscitating like they did. You --
3 you may not be able to speak to that.

4 A. I don't know, because I don't know enough
5 about the --

6 Q. I got you.

7 A. -- underlying pneumonia.

8 MS. KIRKWOOD: I have an objection.
9 We've moving into the clinical areas in which she's said
10 repeatedly that she's not qualified or comfortable
11 commenting. I don't mind once or twice because there
12 are some things that she's run across a case that has
13 that clinical appearance, but to continue, it's taking a
14 lot of time, two more witnesses today, and I wonder if
15 you could primarily stick to her area that pertains to
16 her expertise or ask her if she's comfortable stating
17 something if she's asked --

18 THE COURT: I'll sustain the objection
19 that Counsel should try to stay in the doctor's area of
20 expertise.

21 MR. MURPHY: Right.

22 THE COURT: She's indicated the areas
23 that she's not comfortable talking about, so we need --
24 in order to be efficient. Let's go ahead and take a --
25 a lunch break. Let's be back at 1:30.

1 MR. MURPHY: All right, sir. Thank you,
2 Your Honor.

3 THE COURT: You can step down.

4 (Lunch recess)

5 (Open court, Counsel and Defendant
6 present, no jury)

7 THE COURT: Okay. Let's get back on the
8 record. You may proceed.

9 MR. MURPHY: Thank you, Your Honor.

10 Q. (BY MR. MURPHY) And quite frankly, I don't
11 remember where we left off precisely, but a couple of
12 questions. Just -- a couple of just real quick ones.
13 You had talked some about bruising and aging bruises,
14 and I -- I didn't -- you said you weren't into that
15 much, but I -- the general statement that I've heard is
16 that the color alone is -- is very imprecise. Unless
17 it's a very recent bruise we're not going to be able to
18 really put much stock in that. Do you agree with that?

19 A. I think that's right. It's not something I do
20 myself. It's for forensic clinicians, forensic
21 pathologists to look at bruising, but my understanding
22 is that the visual interpretation is difficult, and as a
23 histopathologist I would say that you need to look at
24 the tissue under the microscope to look at the cellular
25 changes to be sure.

1 Q. Some of -- some of the slides might be helpful
2 if they had tissue and slides to look at?

3 A. Yes. I -- I believe there is one. But it's
4 not sure where it came from, but I understand it came
5 from the back of the head.

6 Q. Okay. The -- it's also been suggested to me
7 that, you know, sometimes they have -- they can have --
8 like, injuries can stack on each other as far as the
9 skin. You could have a bruise on a bruise so to speak.
10 Is that --

11 A. I'm sure you can, but again, you would
12 expect -- if a child, for example, is being subjected to
13 repeated injuries, it would be unlikely you would hit
14 the same bruise again.

15 Q. I understand that.

16 A. Of course, if you've got a bruise and a bit of
17 weakness in the tissues, if this baby were bleeding
18 abnormally, maybe they would rebleed. I don't know.

19 Q. Okay. I really don't have a whole lot more to
20 do. A couple of things that I want to touch. You -- we
21 had talked about -- and I think it's pretty clear, you
22 and I kind of discussed it in a broad sense at some of
23 the break time. SBS, or shaken baby syndrome, say, 10
24 to 15 years ago or so, it started out as a shaking
25 component only. That's been, I guess, a subject of

1 controversy, but even the shaken baby proponents have
2 changed their approach to -- to that issue and have
3 included a -- an impact component to it. Am I right
4 about that?

5 A. That's absolutely right, yes.

6 Q. Okay. I've even heard somebody -- and I don't
7 know who it was, but someone called it shaken impact
8 baby. I mean, that's --

9 A. Yes.

10 Q. Now, and so with regard to -- with regard to
11 our discussions here, part of our problem, I think, is
12 that with regard to shaken baby syndrome, from the
13 standpoint of the issues before this Court, there's the
14 issue as, is there an impact type injury. Isn't that
15 fair to say?

16 A. Yes.

17 Q. Okay. Counselor -- Ms. Kirkwood continues to
18 suggest that -- that someone on -- on my side of the
19 aisle over here continues to refer to it as shaken baby,
20 and -- and I'm not sure, but I'm taking it that she
21 thinks we're -- we're talking about only shaking
22 components. Is that -- was that your understanding when
23 you were doing your -- your analysis?

24 A. I really haven't taken much interest in the
25 shaking component, because there's no evidence for

1 shaking itself causing injury. We have the question of
2 impact in this case.

3 Q. Right.

4 A. And we have the bruises, which are
5 traditionally accepted as being marks of impact. So the
6 significant thing is are there bruises, are they real,
7 and are they contemporaneous.

8 Q. In fact, I think you mentioned that the -- the
9 association -- I guess it's a pathologist or medical
10 examiners changed a position paper. Were you the one
11 that addressed that or was that the other doctor? And I
12 could be wrong.

13 A. I did mention it. In May of this year they
14 changed their terminology.

15 Q. With regard to shaken baby problem, they've --
16 they've kind of added the impact component in and done
17 some other shifts because of the controversy that went
18 on. Is that fair?

19 A. Yes. I think primarily they said we're not
20 going to call it shaken baby syndrome, although they
21 think shaking may be involved. But in many cases, it's
22 impossible to demonstrate that shaking could possibly be
23 responsible for the injuries that are seen. It's far
24 more likely to be an impact.

25 Q. Right. In and of itself basically, it's not

1 going to be likely, I think, is what you're saying.

2 Right?

3 A. Yes. I mean, if you look at the biomechanical
4 studies, if you've got an impact, you don't need a
5 shake, because the forces caused by shaking are so small
6 compared to those by impact. But you can forget the
7 shaking even if it's occurred. It's the impact that's
8 important.

9 Q. In that same position paper, I think that they
10 also acknowledge that you can have impact type trauma to
11 the brain and not have corresponding impact trauma
12 displayed to a -- to an outer barrier. The skull, you
13 don't necessarily have to have a fracture, you don't
14 necessarily have to have a bruise. You could have some
15 impact from a -- some other forces. And I think -- and
16 I'm going to guess at it, but acceleration, deceleration
17 type arguments and things like that. Are you aware of
18 that position paper on that point?

19 A. Well, yes.

20 MS. KIRKWOOD: Objection for a second
21 here. I think we may be speaking about two different
22 papers. Maybe you can clarify if you're talking about
23 the -- the recent Academy of Pediatrics paper, which I
24 think is what she referenced, or whether you're talking
25 about the 2001 NAME, National Association of Medical

1 Examiners paper.

2 MR. MURPHY: Okay. I -- I don't know.
3 I -- because she was a neuropathologist, I thought we
4 said pathologists. Talking about the Academy of Medical
5 Examiners.

6 Q. (BY MR. MURPHY) Which -- which paper are we
7 talking about?

8 A. Well, I started by talking about the 2009
9 paper, but even without talking about the -- the
10 previous NAME paper, these are issues that are being
11 discussed. Not just specifically in those two -- two
12 papers, but this is the -- the point of the discussion.
13 This is the whole crux of it, whether you need impact
14 and whether you can always see evidence of that impact.

15 Now, certainly there are people who say
16 that you can have impact without any outward
17 manifestation and children sometimes turn up at the
18 hospital with a skull fracture and no bruises on the
19 surface of the skull. But certainly as far as babies
20 who die are concerned, the percentage of babies who die
21 who don't have any evidence of impact is very, very
22 small. And in 1988 Duhaime said that all of her series
23 who died had either fractures or bruises, not always
24 visible clinically, but at post mortem under the scalp
25 or fractures that hadn't been noticed at all. So it's

1 extremely unusual to have impact without some evidence
2 of the full autopsy in a baby who's ill enough to have
3 died.

4 Q. Okay. Well, my question was -- my question
5 was, in that paper, do they not recognize or at least
6 they hold in their position paper that you can have
7 the -- the injury to the brain -- impact injury to the
8 brain without external evidence of impact. You don't
9 have to have a fracture, you don't have to have a
10 bruise. Isn't that part of that position paper?

11 A. I'm not sure if it's in the 2009 position
12 paper. I'm afraid I can't remember that, but there are
13 people who say this.

14 Q. And if it is, you don't agree with that?

15 A. Well, it's my experience, my reading of the
16 literature is this may be true of children who survive,
17 who maybe have a momentary period of being unwell and
18 have the retinal hemorrhages and subdural hemorrhages,
19 but they can get better and they're fine. Those --
20 maybe there's impact without evidence. But in those who
21 die and have a post mortem examination, it's very
22 unusual not to find some evidence of impact.

23 Q. Okay. I'm going to take that as a no, I don't
24 agree with it.

25 A. I can't remember the question now.

1 Q. Okay. I want to talk to you just real briefly
2 about retinal hemorrhage. And you -- you -- at the
3 beginning of your discussion of it, you -- you
4 acknowledged as a part of the -- as a part of the
5 neuropathology, that doesn't include you having to look
6 at and deal with the eyes. Is that -- is that a fair
7 statement?

8 A. That's true.

9 Q. However, you did talk about edema,
10 intracranial pressure, and the causation of retinal
11 hemorrhage. And I'm going to assume that just edema
12 alone, from whatever its cause, is going to increase
13 intracranial pressure. Is that fair to say?

14 A. Yes.

15 Q. How does that work? How does that happen? Is
16 it in the vascular system that it increases pressure or
17 is it just because it starts to tighten in the space?
18 How --

19 A. The first -- there are two aspects to this.
20 You can get increased blood flow into the brain and that
21 will -- of course, you've got more volume in a closed
22 box, so you get increased pressure. But the sort of
23 swelling I'm talking about is when the blood comes into
24 the brain, the blood vessels are leaky, they start to
25 leak fluid into the brain, and the brain cells swell up

1 as well. So it's fluid collection in the brain which
2 makes the brain bigger, and then you get an increase in
3 pressure because you've got this closed box.

4 Q. Okay. Any kind of edema of the brain or
5 swelling of the brain is going to increase the pressure.
6 What else might increase the intracranial pressure that
7 might result in -- in -- I'm sorry -- retinal
8 hemorrhage?

9 A. You've got three things in the brain.
10 Essentially, a closed boney box, you've got brain,
11 you've got blood and you've got fluid, the fluid around
12 the brain and the fluid between the cells of the brain.

13 So you can have increase in blood if you
14 have a bleed. You've got a blood clot, you get one of
15 these big subdurals I was talking about. So increase in
16 blood, increase of fluid, because you either obstruct
17 the flow of that fluid or because you've got -- you've
18 got increased fluid coming out of the vessels into the
19 brain tissue. And in that case it can appear as brain
20 swelling. So it's increase in blood, increase in fluid
21 or increase in brain.

22 Q. Okay. And all of those things, can trauma be
23 a part of the causation of any of those three things you
24 just mentioned?

25 A. All of them.

1 Q. All of them. Right? So -- and I think part
2 of the discussion that we have here is if I were
3 characterizing it, again, in layman terms is, did -- did
4 what we've termed the blunt force trauma end up with the
5 edema and increasing the pressure and being the
6 causation of retinal hemorrhage, or was it something
7 that preexisted any trauma, and it was through this -- I
8 guess the coagulopathy disorder and the disease process.
9 Have I fairly characterized where our discrepancy is
10 medically between the two positions?

11 A. I think that it's impossible to say if it was
12 something predating the collapse. I think the most
13 likely thing is that there was a collapse, hypoxia brain
14 swelling, that caused the increased pressure. But if
15 there were trauma, that would also cause hypoxia and
16 brain swelling and retinal hemorrhage. So both -- the
17 same final common pathway.

18 Q. Okay. I may have -- I may have made that too
19 big a question too. Then probably it's not whether
20 whatever it was preceded in time. From your standpoint,
21 you don't care when it -- but it's either going to be
22 some kind of a -- if it's not trauma, it's another
23 differential diagnosis from your standpoint, and you
24 don't believe it's trauma. And that's where you're --
25 that's where your opinion comes in. Is that fair to

1 say?

2 A. I couldn't say whether there's retinal
3 hemorrhage due to trauma, but I think they're probably
4 secondary to the brain swelling and I think they're
5 probably worse than one would normally see, because
6 there's a bleeding problem. So you've got weak vessels
7 being damaged by the swelling and they're going to leak.

8 Q. It was -- it was suggested to me -- again, I
9 don't know how accurate this is from a medical
10 standpoint. It was suggested to me that severe
11 trauma -- and they put it in the terms, I guess, again
12 of severe or not so severe, and also into the depth of
13 the tissue is the way I understood what they were
14 saying. But that you -- sometimes you can look at
15 retinal hemorrhage, it -- it can be more severe at times
16 than others and the more severe it is, the more they
17 lean towards trauma. Is that a fair characterization or
18 an unfair characterization?

19 A. Well, there are those people who say that the
20 more severe it is, the more likely it is to be
21 nonaccidental trauma.

22 Q. Okay.

23 A. But I think where you've got a baby who's
24 bleeding, you have to be very careful because this baby
25 was bleeding more than she should have done, so she was

1 going to bleed into her eyes anyway, even perhaps
2 without the brain swelling.

3 Q. And that was -- that's a good point, because
4 again, we're back to that coagulopathy problem. Right?
5 And so the baby was bleeding more than she would -- you
6 know, would normally, and if I understood what you've
7 just said, you would expect that even if she didn't have
8 the edema?

9 A. It's possible. She's got blood coming out of
10 her endotracheal tube, she's got clotting factors all
11 over the place. So maybe she could have bled into the
12 eyes as well. I don't know, but I'm sure even a small
13 rise in intracranial pressure then would be a big
14 trigger for retinal bleeding.

15 Q. And your interpretation of her having the
16 coagulopathy problem is from other doctors with other
17 measures, because you did not see the type of things
18 that you associated with it in the brain. Those --

19 A. I think the intraventricular hemorrhage is
20 probably indication of coagulopathy, and the
21 subarachnoid hemorrhage would be indications of a
22 coagulopathy. They're rather more severe than one would
23 see in just ordinary hypoxic brain damage.

24 Q. Would you like to go home?

25 A. Please.

1 MR. MURPHY: Thank you, Doctor.

2 We'll pass the witness, Your Honor.

3 REDIRECT EXAMINATION

4 BY MS. KIRKWOOD:

5 Q. Okay. Now I'm the one not letting you go
6 home. The -- I think there might be an issue here -- I
7 know that Dr. Levy diagnosed DIC, but I think you
8 mentioned that it could be some coagulopathy other than
9 DIC. Am I understanding that correctly?

10 A. I -- I can't tell. I didn't see the features
11 I would expect to see of DIC. To make the distinction
12 between the various different disorders of blood
13 clotting, including hemolysis, we would need to have a
14 hematologist look at the lab results and -- and make
15 that analysis.

16 Q. I see. But is there any doubt in your mind as
17 to whether the child had a coagulopathy of whatever
18 nature?

19 A. No.

20 Q. No doubt whatsoever?

21 A. No doubt from what I've seen from the clinical
22 findings.

23 Q. Okay. Mr. Murphy referred to some fresh
24 hemorrhages. I think it was in the neuropathology
25 report. Does "fresh" give you a time -- a time line at

1 all?

2 A. It's a very nonspecific term. If I were to
3 want to say how fresh, I would look for cellular
4 reaction to the bleeding. Now, there was bleeding in
5 the pons in the deep part of the brain. That was just
6 red blood cells in the tissues. I didn't see any
7 macrophages, I didn't see capillary reaction, I didn't
8 see any of the things that the body would normally do to
9 try to heal these bleeds. So that tells me that they
10 must be less than two days as far as those bleeds in
11 the -- in the brain stem are concerned.

12 Q. And would that be consistent with bleeding in
13 the area of the brain after hospitalization?

14 A. Yes. This is -- the position and the -- the
15 timing would both be absolutely consistent with this
16 being secondary to this massive brain swelling and the
17 brain forcing itself out of the skull.

18 Q. I see. And the massive brain swelling is --
19 is due, in your opinion, to lack of oxygen in some
20 manner? Is that right?

21 A. Yes. I think with a 30-minute period of
22 cardiac arrest, that would be --

23 Q. Okay. And can the -- can the lack of oxygen
24 be either slow or fast? Can a person be suffering from
25 lack of oxygen from, say, pneumonia for some days?

1 A. Yes. And we've already heard that if a
2 policeman chokes, it would be very quick, but with a
3 baby who -- obviously collapse of the heart, not
4 functioning normally for 30 minutes, it's a little bit
5 slower. But it can still ultimately be fatal to the
6 brain.

7 Q. And this can occur whether the cause of death
8 is natural or accidental, homicide or any of those?

9 A. Absolutely, yes.

10 Q. Okay. You had mentioned earlier that you were
11 trying to cut back, given the State's position that some
12 witnesses have changed their -- their descriptions of
13 the child's clinical condition. You were trying to cut
14 back to the medical records, and to see what they said.
15 And I believe -- is there any --

16 MS. KIRKWOOD: I need Ruth again. Sorry.

17 Q. (BY MS. KIRKWOOD) There were two additional
18 records. I don't think we had a complete set of medical
19 records, because it wasn't necessary for the
20 neuropathology. And of course, we had very limited ones
21 to begin with. This is a -- a -- a nurse's report and I
22 don't know if you can see it. And probably not. I
23 should have had -- I should have had a copy made. Down
24 at the bottom there, it says -- it's med 219. And I'm
25 sorry.

1 MS. KIRKWOOD: May I stand up and go over
2 here since I have forgotten to make a copy?

3 THE COURT: Yes, certainly.

4 Q. (BY MS. KIRKWOOD) That was absurd. I thought
5 I could read it better here. Can you move it down here
6 so we can see the date on it? I don't know if you can
7 read the date there. It's October 29th -- October 29th,
8 2000, so that would be the day after hospital admission.
9 These are nursing notes. And I don't know if you can
10 read those here, but it says abnormal stools. Color,
11 black. And that's recorded by the nurse. Would that be
12 significant to you?

13 A. I think it says there it's mucousy as well.

14 Q. Mucousy as well?

15 A. There's black stools, that's melena, that's
16 what was described before the baby came into hospital.

17 Q. And so that would be objective medical
18 evidence from a nurse rather than a caretaker?

19 A. Yes.

20 Q. Okay. Thank you. And I have one more.

21 I should have given you all of these. You
22 doubtlessly would have found hundreds more, but then --
23 then again, you probably wouldn't have come.

24 A. I have quite a big pile of papers.

25 Q. Yes. Okay. This one is a confidential donor

1 form, and it's for Isis Vas and this is her mother who
2 is providing information to the organ donation
3 transplant people. And she says here -- the issue is
4 has the donor -- has the donor recently exhibited any
5 unexplained weakness, fatigue or flu-like symptoms such
6 as cough, cold, shortness of breath, swollen lymph
7 nodes, nausea, vomiting, persistent diarrhea, night
8 sweats, fever over 100.5 and so on. And her answer here
9 as recorded again by a nurse is on 10-27, that's the
10 night before hospital admission, the mother says she had
11 a fever of 102. She was being given Children's Motrin
12 which is Ibuprofen, PediaCare, 1 half teaspoon
13 Cefalexin, which is the same as Cephalixin, I suppose,
14 and the breathing treatment.

15 Would that support your -- your -- your
16 sense that the labs show a preexisting illness?

17 A. I think so, yes. And that was again reflected
18 in -- in Dr. Levy's note when he admitted the baby, that
19 there had been breathing problems --

20 Q. Yes.

21 A. -- prior to her admission. And that's quite a
22 significant temperature as well.

23 Q. Yes. Yes. Yes, and I think the State's
24 position was that -- was that the clinical information
25 had been given by Ernie, so therefore was suspect, but

1 this is also the mother providing the same information.

2 A. Yes.

3 Q. Okay.

4 MS. KIRKWOOD: That's it. Thank you very
5 much.

6 MR. MURPHY: Just one last question.

7 RECROSS-EXAMINATION

8 BY MR. MURPHY:

9 Q. Did Dr. McClain say anything that you recall
10 in the autopsy regarding the stool found inside the baby
11 at the autopsy?

12 A. No. That's one of the difficulties. She
13 describes what's in the stomach, but she doesn't
14 describe from there on down, and it would have been the
15 rest of the bowel where it would have been found.

16 Q. Okay. So it -- so she didn't report it. If
17 she has any memory, we're going to have to ask her?

18 A. Yes.

19 MR. MURPHY: Thank you. That's all we
20 have, Your Honor.

21 THE WITNESS: Thank you very much.

22 THE COURT: You may step down, Doctor.

23 THE WITNESS: Thank you.

24 THE COURT: I want to thank you for being
25 here with us and giving us the benefit of your

1 expertise, and I know you've sacrificed quite a bit to
2 be here at your own expense and everything, and we
3 appreciate it. Thank you. You are excused.

4 MS. KIRKWOOD: And, Your Honor, I have a
5 request which I had just thought of. If it is all right
6 if Dr. Squier sits with me at counsel table during the
7 examination of Dr. McClain.

8 THE COURT: Normally, if she could sit
9 just right outside there.

10 MS. KIRKWOOD: Oh, okay.

11 THE COURT: Normally --

12 MS. KIRKWOOD: And consult every so
13 often?

14 THE COURT: Yes, absolutely.

15 MS. KIRKWOOD: Because I'm pretty sure
16 that I won't know the right questions. Thank you. And
17 she has agreed to do that.

18 MR. BASKETT: State would call Dr. Joni
19 McClain.

20 (Witness sworn)

21 MR. BASKETT: Your Honor, at this time
22 the State would tender the office of the medical
23 examiner at SWIFS' records as State's Exhibit Number
24 158. I'm also providing a copy to opposing counsel.

25 THE COURT: Any objection to the State's

1 tender of Exhibit Number 158?

2 MS. KIRKWOOD: No, there is not, but I
3 find I'm missing materials, which would be crippling.

4 THE COURT: 158 is admitted.

5 MS. KIRKWOOD: I didn't see what it was,
6 but I'm sure I don't object.

7 MR. BASKETT: The State would also offer
8 State's Exhibit Number 175, the autopsy report of
9 Dr. Joni McClain. Let the record reflect I'm supplying
10 opposing counsel a copy of that.

11 THE COURT: Any objection to 175?

12 MS. KIRKWOOD: No.

13 THE COURT: 175 is admitted.

14 MR. BASKETT: Let the record reflect that
15 the State is offering State's Exhibit Number 176, a CV
16 of Dr. Joni McClain. Let the record reflect I'm also
17 supplying opposing counsel a copy of that exhibit.

18 MS. KIRKWOOD: Thank you.

19 THE COURT: Any objection to 176, the CV
20 of Dr. McClain?

21 MS. KIRKWOOD: No.

22 THE COURT: It is admitted.

23 JONI McCLAIN,
24 having been first duly sworn, testified as follows:

25 DIRECT EXAMINATION

1 BY MR. BASKETT:

2 Q. Dr. McClain, are you comfortable there?

3 A. Yes.

4 Q. Okay. Would you please state your name and
5 spell your name for the record, please?

6 A. Joni McClain, J-O-N-I, M-c-C-L-A-I-N.

7 Q. And, Dr. McClain, would you just give us a
8 brief overview of your medical training?

9 A. Graduated from the University of Oklahoma
10 School of Medicine in 1983 with a doctor of medicine
11 degree. I then spent four years at the Oklahoma
12 teaching hospitals doing an anatomic and clinical
13 pathology -- excuse me -- residency. Then I spent one
14 year at Indiana University doing a forensic pathology
15 fellowship, and then I spent four years at the office of
16 the armed forces medical examiner in Washington, D.C.
17 Then in June of 1992 I was hired as a medical examiner
18 in Dallas County, and I became the deputy chief medical
19 examiner in October of 2004.

20 Q. And can you describe what boards or
21 organizations that you've been involved in?

22 A. I'm board certified in anatomic, clinical and
23 forensic pathology. I'm past president of the National
24 Association of Medical Examiners, and a fellow in the
25 American Academy of Forensic Sciences.

1 Q. Okay. And how long have you worked at SWIFS?

2 A. About 17 and a half years.

3 Q. And during the 17 and a half years that you've
4 worked at SWIFS, about -- approximately how many
5 autopsies have you performed?

6 A. Over 5,000.

7 Q. Okay. With respect to that, does -- when you
8 do an autopsy, do you have a unique identifying number
9 that identifies that case throughout?

10 A. Yes. We give a unique number to all of our
11 cases. In this case of Isis Vas, it's 3854-00. So that
12 means that's the 3,854th case that came through our
13 office.

14 Q. Okay. And that's on -- as of 10-31-2000. Is
15 that correct?

16 A. Correct.

17 Q. And that's when you did the autopsy at about
18 8:00 a.m. Is that correct?

19 A. Yes.

20 Q. Now, with respect to that, tell us what the
21 Southwest Institute of Forensic Sciences is, because
22 we've heard a lot about it during this hearing.

23 A. Well, the Southwest Institute of Forensic
24 Sciences is an agency, a Dallas County agency. It
25 consists of three parts. We have the medical examiners

1 section, the toxicology section, and the crime lab
2 section.

3 Q. Okay. Did you perform an autopsy on a child
4 named Isis Charm Vas?

5 A. Yes.

6 Q. What was her age?

7 A. She was 6 months.

8 Q. Was she a white female?

9 A. Yes.

10 Q. Okay. And the date of the autopsy is shown
11 as -- I mean, the date of her death is shown as October
12 the 29th, 2000, at 10:45 a.m. Is that correct?

13 A. Yes.

14 Q. And you did an examination. You did the
15 autopsy a couple days later on October 31st, 2000, at
16 8:00 a.m. Is that correct?

17 A. Yes.

18 Q. Okay. Now, in performing an autopsy, are you
19 trained -- what are you -- what is an autopsy? Just
20 explain it to the trial court real briefly.

21 A. Well, an autopsy is an examination of a body
22 after someone has died. We look at the outer portions
23 of the body, the external portions of the body for any
24 injuries or diseases. Then we look at the internal
25 organs for any injuries or diseases. We also take

1 photographs, we also take fluids for toxicology.

2 Q. Okay. Now, with respect to that, did --
3 what -- when you do an autopsy, did you perform that
4 type of an autopsy that you've described on Isis Charm
5 Vas on October 31st, 2000?

6 A. Yes.

7 Q. Okay. Now, with respect to that, can you just
8 give us a general overview of what an autopsy would have
9 been on October 31, 2000, that you performed at SWIFS;
10 just an overview of what you would have done at that
11 time?

12 A. I would have done a "as is" photograph.
13 That's a photograph that we take before we do anything
14 to the body. Then I would have collected any evidence,
15 take additional photographs of the outer portion of the
16 body, examined the outer portion of the body, then look
17 at the internal portion of the body, and document any
18 injuries, you know, of the inner -- inner organs. Then
19 I'd go ahead and take various fluids for toxicology.

20 Q. Okay. In the 5,000 autopsies that you've
21 performed, would it be a common thing -- or, well, not
22 common, but would occasionally you have bodies that have
23 been -- organs have been removed for organ harvest?

24 A. Yes.

25 Q. Okay. And so you're -- you're familiar with

1 that. Were you familiar with how to deal with that
2 situation in ordinary autopsy back in October 31, 2000?

3 A. Yes.

4 Q. Okay. And you've had many more since that
5 time. Is that correct?

6 A. Yes.

7 Q. And how long had you been at SWIFS in October
8 of 2000, approximately?

9 A. Let's see here. That would have been eight
10 years.

11 Q. Now, I noticed on the -- let's just go down
12 your report, if we may. I noticed that at the front of
13 your report -- if you can look at it there. I'll give
14 you a minute. You list various organ weights. Is that
15 correct?

16 A. Yes.

17 Q. Okay. In a general way, tell us how you weigh
18 an organ.

19 A. Well, we remove the organ from the body and
20 put it on a scale and weigh it.

21 Q. Okay. And then that's documented?

22 A. Yes.

23 Q. Okay. And that's what these numbers reflect
24 here in the -- grams. Is that correct?

25 A. Yes.

1 Q. Okay. Now, in this instance your autopsy
2 report shows you removed what organs for weight?

3 A. The brain, the heart, the lungs, and both
4 kidneys.

5 Q. Okay. And does your -- does the top of that
6 show that you did not weigh the liver and spleen?

7 A. That's correct, because they weren't present
8 at the time of autopsy. They had been previously
9 harvested for transplantation services.

10 Q. Okay. Now, with respect to that, let's go to
11 your external examination of the body. Is there
12 something important there that you want to call our
13 attention to?

14 A. What I would like to call the attention to is
15 the injury first -- the blunt force injuries that I
16 found on the body.

17 Q. Okay. And what -- what injuries do you first
18 want to discuss?

19 A. Well, we could first start with the blunt
20 force injuries of the head. In that, I found areas of
21 contusion. And contusion is just another name for a
22 bruise. It's a blunt force injury, and I found these
23 contusions on the forehead. There was also an area of
24 hemorrhage of the middle portion of the eyelid. Lateral
25 to the left eye there was another purple contusion. The

1 left cheek showed a one-half inch purple contusion and
2 there was a red contusion at the tip of the nose. The
3 left lateral chin showed an area of purple contusion.
4 The right side of the head above the ear showed a blue
5 contusion, and then above and lateral to the right
6 eyebrow there were two purple contusions.

7 Then examination of the back of the head
8 showed an area of abrasion. An abrasion is a scraping
9 of the skin like when, you know, you're running and you
10 fall down and you scrape your knee, that's what we call
11 an abrasion. It's an impact point. The left side of
12 the back of the head also showed an area of contusion.
13 Corresponding to that previously described abrasion,
14 when we reflect the scalp back -- and that's how we
15 essentially remove the brain. We make an incision from
16 ear to ear, reflect the scalp forward and back. There
17 was a corresponding area of hemorrhage beneath that
18 abrasion that I just talked about.

19 Q. Okay.

20 A. Also, there was another midline kind of
21 parietal occipital area of subscalpular hemorrhage.
22 After I photographed and documented that, I removed the
23 top of the skull. At that point there was right-sided
24 subdural hemorrhage that consisted of liquid blood of
25 the right cerebral hemisphere and a few blood clots. I

1 saved the brain for further examination by our
2 department of neuropathology at UT Southwestern Medical
3 Center.

4 Q. Okay. Now, we've talked about the head
5 injuries just a little bit. Let's go back and talk
6 about the organ removal and weight. When you remove
7 these organs, do you personally handle those organs?

8 A. You're talking about -- yes. Well, yes,
9 because we have to dissect the organs.

10 Q. Okay. And so when you personally remove those
11 organs you actually look at them at a gross level in
12 front of you. Is that correct?

13 A. Correct. We look at them. Then we dissect
14 them.

15 Q. Okay. But -- we'll get to that in just a
16 minute.

17 A. Okay.

18 Q. So you look at them. Are you look -- when you
19 grossly look at them initially and they're removed and
20 weighed, do you look for any abnormalities in those
21 organs?

22 A. Yes.

23 Q. And if you find something, then you would go
24 further than that. Is that correct?

25 A. Well, we examine, you know, the organs, but

1 certainly I document that in my notes and then in the
2 final autopsy report.

3 Q. Okay. Let's go to some photographs of the
4 head.

5 MR. BASKETT: Ruth, I'll probably need
6 you at this point.

7 Q. (BY MR. BASKETT) I'm going to show you what's
8 been marked as State's Exhibit Number 89, 88, 85, 87,
9 91, 92, and -- and see if those bear the unique
10 identifying number of SWIFS for this child, Isis Charm
11 Vas.

12 A. Yes, they do.

13 MR. BASKETT: Let the record reflect that
14 I'm showing these to opposing counsel briefly before
15 offering them for admission.

16 MS. KIRKWOOD: Oh, I'm sorry. Yes, of
17 course.

18 THE COURT: Any objections to those?

19 MS. KIRKWOOD: No objections whatsoever.

20 THE COURT: Counsel, would you please
21 state the numbers of exhibits again for the record.

22 MR. BASKETT: Sure. The numbers are --
23 let's see. Let me start from the bottom. 85, 87, 88,
24 89, 91 and 92.

25 THE COURT: Okay. State's Exhibits 85,

1 87, 88, 89, 91 and 92 are admitted.

2 MR. BASKETT: Okay. I'm going to ask
3 Ruth to place State's Exhibit Number 92 on the board.
4 And I'm going to ask you some questions about this
5 photograph.

6 Q. (BY MR. BASKETT) Dr. McClain, can you take
7 the red laser pen in front of you and show us what this
8 photograph is showing?

9 A. Okay. Let's see here. What we have here is
10 an area of contusion in this region of the right side of
11 the face. And then --

12 THE COURT: Doctor, let me interrupt you.
13 Hold on just a minute. Go ahead and come inside the
14 bar. Usually just the attorneys and the parties, but in
15 this case I'm going to make an exception since -- the
16 nature of this case. If you would, just come inside the
17 well of the court here and provide a chair for the
18 doctor so she can kind of --

19 MS. KIRKWOOD: Yes. Yes. Why don't you
20 sit in my place. And Dr. Squier can sit here and I'll
21 sit here. Thank you.

22 THE COURT: All right.

23 THE WITNESS: And there's such a light.
24 Could I stand down there? Because I'm kind of getting a
25 glare. Could I stand by the actual photograph?

1 THE COURT: Wherever you feel
2 comfortable, Doctor.

3 THE WITNESS: Because I'm kind of washed
4 out here.

5 THE COURT: Yeah. I can't tell that, but
6 go ahead and get down, wherever you need to be. Do you
7 need a chair while you're there?

8 THE WITNESS: No, I can stand up if
9 that's okay.

10 THE COURT: Sure.

11 THE WITNESS: I can see it better down
12 here. Can I point with this thing?

13 A. Well, it kind of -- well, it kind of shows,
14 but -- this is an area of contusion. You can see some
15 parchment-like areas of abrasion, and you've got another
16 area of contusion here.

17 THE COURT: Where's the laser pointer?

18 MR. BASKETT: She's using it.

19 THE WITNESS: I was using it on that.

20 MR. MURPHY: She's using it directly on
21 the photo.

22 THE COURT: Oh, I see.

23 A. Okay. Here and here.

24 Q. (BY MR. BASKETT) And you identified that as a
25 contusion?

1 A. Yes.

2 Q. Okay. I'm going to ask Ruth to put on State's
3 Exhibit Number 89. And please, Dr. McClain, explain
4 what you see on that photograph.

5 A. Here you've got two areas of contusion and
6 then another area of contusion back here.

7 THE WITNESS: Am I blocking you?

8 THE COURT: No, you're not blocking me,
9 Doctor. You're fine.

10 A. Okay. There, there and there.

11 Q. (BY MR. BASKETT) Okay. Now, I'm going to ask
12 you to put on State's Exhibit Number 88. What -- what
13 side -- what can you tell us about this photograph?

14 A. This is the left-hand side. Very faint, but
15 there's a purple area of contusion here.

16 Q. Okay. And does that also show a little
17 measuring --

18 A. Yes.

19 Q. Now, with respect to this photograph, I'm
20 going to ask her to put on State's Exhibit Photograph
21 Number 85. What is this photograph showing of the head?

22 A. Okay. This is showing what I counted as five
23 different areas of contusion on the forehead.

24 Q. Okay. Now, let's look at State's Exhibit
25 Number 87. What is that picture showing us, Doctor?

1 A. That shows the left -- you know, the left side
2 of the -- the face.

3 Q. Okay. Now, I'm also going to show you State's
4 Exhibit Number 91. What is this photograph showing?

5 A. Again, shows the area of contusion.

6 Q. Okay. And so when you do this at the autopsy,
7 Dr. McClain, do you make some personal notes and then
8 photographically document the notes?

9 A. I make the notes and then we photograph the
10 body.

11 Q. Okay. So you make some notes about the
12 bruises and you photograph and document those?

13 A. Uh-huh.

14 Q. And those notes are already included in the
15 State's Exhibit that we put in at SWIFS. Now, with
16 respect to that is, I want you to -- I want to be able
17 to show these to the Judge and tell the Judge -- because
18 the pictures in their real life are a lot better. And
19 tell the Judge whether you saw any evidence of a spider
20 bite on any of these pictures.

21 A. No.

22 MS. KIRKWOOD: Your Honor?

23 THE COURT: Yes, ma'am. Do you have an
24 objection?

25 MS. KIRKWOOD: I don't have an objection,

1 but I am going to ask -- I have asked repeatedly -- I
2 received photographs on disk that are not anywhere near
3 as clear. I have repeatedly asked for clearer copies,
4 and it appears that clearer copies are available and
5 that we have not been given them. I'm going to ask for
6 an exact duplicate of those sets from the State.

7 THE COURT: To the extent that's an
8 objection, overruled.

9 MS. KIRKWOOD: Pardon? Yes, I'm asking
10 for an order that they provide them.

11 THE COURT: Refused.

12 MR. BASKETT: Okay.

13 Q. (BY MR. BASKETT) Now, with respect to that,
14 Dr. McClain, is there -- do you -- when you do an
15 autopsy, do you look for some kind of -- any type of
16 necrotizing injury that occurs on the head?

17 A. Yes. You know, if you're talking about a
18 brown recluse bite, they're known to cause necrosis or
19 skin damage, and I don't see anything like that on these
20 photos.

21 Q. Okay. And if you had seen those, would you
22 have documented necrotizing bite of some type?

23 A. Yes. And, you know, I photographed all the
24 way around the head and there's nothing that looks like
25 a -- a necrotizing spider bite.

1 Q. Okay. Now, let's go to some additional
2 photographs. Let's look --

3 MR. BASKETT: The State will offer at
4 this -- the State will offer --

5 Q. (BY MR. BASKETT) Well, let me ask you this.
6 Does this -- does State's Exhibit Number 163, does -- is
7 that a -- contain the unique identifying number of SWIFS
8 for the child, Isis Charm Vas?

9 A. Yes.

10 MR. BASKETT: Let the record reflect I'm
11 showing a copy of this to Defense counsel.

12 MS. KIRKWOOD: Yes.

13 MR. BASKETT: Okay. On this particular
14 one we do have two copies for some reason, Judge. I'll
15 let the Court have this copy and I'll ask Ruth to put up
16 on the screen State's Exhibit Number 163.

17 MR. MURPHY: Have you offered it, Mark?
18 Have you offered it?

19 MR. BASKETT: At this time we will offer
20 State's Exhibit Number 163.

21 THE COURT: Any objections to 163?

22 MS. KIRKWOOD: I actually do object to
23 all of these photographs in that they have not been
24 provided to us.

25 THE COURT: They're being introduced into

1 Court. You're welcome to see them --

2 MS. KIRKWOOD: Yes.

3 THE COURT: -- and, you know, if -- at
4 any time. So --

5 MS. KIRKWOOD: Yes. Yes, but these
6 should have been made available to our experts.

7 THE COURT: Overruled. 163 is admitted.

8 MS. KIRKWOOD: Okay.

9 A. This photograph, what we've done -- here are
10 the ears, and then the incision is made across the --
11 the top of the head. And what we have done is reflected
12 back the scalp backwards. So this is the back of the
13 head. And if you look here in this area, this is an
14 impact point. You've got full thickness blood in this
15 region as well as if you took this scalp up onto the
16 skull, you've also got contusion there. And then if you
17 look on the other side, corresponding to this area is
18 that abrasion, that impact point.

19 Q. Okay. Now, with respect to that is, it
20 doesn't show very well on the screen, so if Ms. Kirkwood
21 and the doctor want to come up here, if it's okay with
22 the Court, we can show it on the picture itself in front
23 of the Judge. Show the Judge exactly what we're
24 referring to so everybody can see.

25 MR. BASKETT: Do y'all want to -- can

1 y'all see from there?

2 THE COURT: Okay.

3 A. This is contusion. Full thickness scalp and
4 then you've got contusion on the back of the skull
5 itself. On the other side is where that abrasion is
6 located.

7 Q. (BY MR. BASKETT) Okay. And what kind of
8 incision do you do to make -- to pull this back to this
9 position?

10 A. Make an incision from ear to ear and then
11 reflect the scalp back. And this is the back part of
12 the scalp, and then we reflect the scalp forward.

13 Q. I'm going to show you what's been marked as
14 State's Exhibit Number 161, and ask you if this shows
15 you the unique identifying number for -- on the autopsy
16 of Isis Charm Vas?

17 A. Yes.

18 Q. And that's a SWIFS number. Is that correct?

19 A. Correct.

20 Q. Okay.

21 MR. BASKETT: Let the record reflect that
22 I'm going to show this photograph to opposing counsel.

23 MS. KIRKWOOD: Thank you. Yes.

24 MR. BASKETT: Thank you. Your Honor, at
25 this time the State would offer State's Exhibit Number

1 161 into evidence.

2 THE COURT: Any objection?

3 MS. KIRKWOOD: Same objection.

4 THE COURT: Overruled. 161 is admitted.

5 MR. BASKETT: Okay. At this time I'm
6 going to ask Ruth to put that exhibit up on the board.

7 Q. (BY MR. BASKETT) Doctor, would you please
8 describe what -- how this -- what view this is, how you
9 reach this point with your decisions and so forth?

10 A. Again, we made the cut, we're reflecting the
11 scalp forward and you have discrete impact points to the
12 head in these regions. It's subscalpular hemorrhage.

13 Q. Okay. I'm going to hold the picture up in
14 front of the Court so you can see it and explain it
15 because the picture is a lot better this way.

16 A. Again, you can see the discrete areas of
17 impact to this head.

18 Q. Okay. And when you say discrete impact areas,
19 what -- you're referring to those red areas?

20 A. The red areas. That's hemorrhage.

21 Q. Okay. That's for the appellate record. Now,
22 with respect to that is, do you feel that these are
23 separate impact points?

24 A. Yes.

25 Q. Okay. I'm going to show you State's Exhibit

1 Number 160. It's -- does that bear the SWIFS unique
2 identifying number?

3 A. Yes, it does.

4 MR. BASKETT: Okay. I do have an extra
5 copy of this. I'm supplying that to Defense counsel at
6 this time.

7 At this time, Your Honor, the State would
8 offer State's Exhibit Number 160 into evidence.

9 THE COURT: Any objection to 160?

10 MS. KIRKWOOD: Same objection.

11 THE COURT: Overruled. 160 is admitted.

12 Q. (BY MR. BASKETT) Let me just hold it up so
13 you can show it to the Judge. What is it showing?

14 A. The scalp is reflected forward. This is the
15 nose and you've got discrete impact points, subscalpular
16 hemorrhage.

17 Q. I'm going to show you what's been marked as
18 State's Exhibit Number 164. And see if that bears
19 SWIFS' unique identifying number with regard to Isis
20 Charm Vas.

21 A. Yes, it does.

22 MR. BASKETT: Okay. I'm going to -- let
23 the record reflect I'm showing a copy of this to Defense
24 counsel at this time.

25 At this time the State would offer Exhibit

1 Number 164 into evidence.

2 THE COURT: Any objection?

3 MS. KIRKWOOD: Same objection.

4 THE COURT: Overruled. 164 is admitted.

5 Q. (BY MR. BASKETT) With respect to this
6 photograph, tell us what this is showing on the head.

7 A. This is the right side of the head. We've got
8 a lateral view. Here's the ear and again, you've got
9 the subscalpular areas of contusion and some
10 corresponding on the skull.

11 Q. Now, after you finish those type of initial
12 cuts to pull the skin back and to photograph and
13 document what you've documented, Dr. McClain, what do
14 you do next with respect to the brain?

15 A. Then we remove the calvarium, or top of the
16 skull, and then examine to see if there's a subdural
17 hemorrhage, any subarachnoid hemorrhage --

18 Q. Okay.

19 A. -- or epidural hemorrhage.

20 Q. And how do you get into the skull? What
21 method do you use?

22 A. We use a Stryker saw that cuts through the
23 bone and then we reflect back the skullcap.

24 Q. Okay. And once you -- once you get to that
25 point, then you can look inside and see the brain

1 itself?

2 A. Correct.

3 Q. Okay. Now, with respect to that, on some of
4 these other pictures that we've shown, do you see the
5 skull -- can you pick up one of those and show the Judge
6 what the part of the skull is before you cut it open?
7 And I'll hold it up here so everyone can see it.

8 A. Well, this is the skull part here and this is
9 the scalp that we've reflected back. So we're going to
10 be taking this part of the skull off.

11 Q. Okay.

12 MR. BASKETT: And let the record reflect
13 that you're referring to State's Exhibit Number 164.

14 Q. (BY MR. BASKETT) I'm going to show you what's
15 been marked as State's Exhibits Number 165 and 166.
16 Does this bear the unique identifying numbers for SWIFS
17 on Isis Charm Vas?

18 A. Yes.

19 Q. Okay.

20 MR. BASKETT: I'm going to ask Ruth to
21 put up the first shot, which is going to be marked as
22 State's Exhibit Number 165.

23 Q. (BY MR. BASKETT) Can you take your laser pen,
24 Doctor --

25 THE COURT: Have those been admitted?

1 MR. BASKETT: I'm sorry. I got ahead of
2 myself here. Let the record reflect that I'm showing
3 copies of these two exhibits to Defense counsel.

4 MS. KIRKWOOD: Shall we just do a
5 continuing objection on the SWIFS photographs?

6 THE COURT: Suit yourself.

7 MS. KIRKWOOD: I'll do a continuing
8 objection to the SWIFS photographs on the grounds that
9 we did not have them. I would have no objection if we
10 received the pictures of comparable qualities.

11 THE COURT: I'll grant you a continuing
12 objection and your objections are overruled. 165, 166
13 are admitted.

14 MR. BASKETT: Okay. Thank you, Your
15 Honor. I'll let the -- I'll let Ruth Johnson place
16 Number 165 up for review.

17 Q. (BY MR. BASKETT) Doctor, now, is this after
18 you've sawed the brain open?

19 A. Yes. And we've reflected back the portions of
20 skull. And you can really see it better not on this,
21 but we have subdural hemorrhage all along here and then
22 there is subarachnoid hemorrhage on the brain.

23 Q. Okay. Now, I'm going to hold that photograph
24 up in front of the Judge, because it is very hard to see
25 on that board. It just doesn't have the clarity.

1 Explain this to the Judge again and so that Defense
2 counsel can see too.

3 A. This is the subdural hemorrhage on the right
4 side of the cerebral hemispheres. And we haven't
5 cleaned anything, so some of this may also be
6 additional, you know, that -- here it's subdural, but
7 there's also subarachnoid hemorrhage which you can't
8 wash off.

9 Q. Okay. Now, with respect to State's Exhibit
10 Number 166, can you show us what that is showing?

11 A. This is the right side, kind of a lateral
12 view, and you can see where we've removed the skull.
13 There is the subdural hemorrhage and then the
14 subarachnoid region. You can see the cerebral
15 hemispheres.

16 Q. Okay. I'm going to show you what's been
17 marked as State's Exhibit Number 167. Can you
18 identify -- can you state if that's SWIFS' unique
19 identifying number?

20 A. Yes, it is. And it shows the left side of the
21 head after the skull that's been reflected back.

22 MR. BASKETT: Let me show this to Defense
23 counsel.

24 MS. KIRKWOOD: Yes.

25 THE COURT: Okay.

1 MR. BASKETT: Your Honor, at this time
2 the State would offer State's Exhibit Number 167 into
3 evidence.

4 THE COURT: Okay. 167 is admitted,
5 recognizing the continuing objection to it.

6 MR. BASKETT: Let me -- the record
7 reflect that I'm showing this to the Judge so that the
8 doctor can -- and Defense counsel so the doctor can
9 explain what this shows now.

10 A. This, again, shows an area of impact on the
11 scalp. Under the scalp, I should say. And here's the
12 cerebral hemisphere. You can see some of the
13 subarachnoid hemorrhage.

14 Q. (BY MR. BASKETT) Okay. And that's on State's
15 Exhibit Number 167. Is that correct?

16 A. Yes.

17 Q. Okay. Thank you. Okay. Doctor, I'm going to
18 show you one more photograph that's been marked as
19 State's Exhibit Number 168. Does that bear SWIFS'
20 unique identifying number with respect to Isis Charm
21 Vas?

22 A. Yes.

23 MR. BASKETT: Okay. Let the record
24 reflect that I'm allowing Defense counsel and her expert
25 to review that at this time.

1 MS. KIRKWOOD: Yes.

2 MR. BASKETT: At this time, Your Honor,
3 the State would offer State's Exhibit Number 168 into
4 evidence.

5 THE COURT: 168 is admitted.

6 Q. (BY MR. BASKETT) Okay. I'm going to hold
7 this up -- let's see if this will be better on here on
8 the screen.

9 MR. BASKETT: Let me just hold it up,
10 Judge. I think it will be better because it's much
11 better quality.

12 Q. (BY MR. BASKETT) Can you please describe what
13 this photograph shows.

14 A. This is the back of the head showing the area
15 of abrasion. Again, abrasion is a scraping of the skin.
16 It indicates an impact point like when you fall and skin
17 your knee.

18 Q. Doctor, if you'll return to your seat for just
19 a minute so we can finish some other questioning and
20 then we may have you up again.

21 Now, Doctor, with respect to the abrasion
22 to the back of the head, there's been some state -- have
23 you -- let me ask you this. Have you autopsied bodies
24 that were on the ventilator for days and weeks?

25 A. Yes.

1 Q. Okay. And is this -- would this be -- would
2 that be a common finding that you would find in those
3 type of situations?

4 A. No.

5 Q. Okay. As you recall today, do you remember
6 any such abrasion from being on a ventilator for that
7 period of time?

8 A. No.

9 Q. So would you say that it's common that there
10 would be no -- that if that -- that -- in other words,
11 you're describing that as an injury?

12 A. That is correct.

13 Q. Not a hospital artifact?

14 A. That is correct.

15 Q. Okay. And that abrasion there, does that --
16 behind that abrasion would be what, if you pulled the
17 skin back?

18 A. You've got that area of contusion, full
19 thickness scalp contusion, and then a little contusion
20 even on the skull itself; indicates blunt force trauma.

21 Q. Okay. And beyond that, even outside that area
22 you see other points of impact?

23 A. Correct.

24 Q. Now, let's go back to page 2 of your report
25 and let's talk about the blunt force injuries of the

1 trunk that you saw.

2 A. The left lateral chest showed a small
3 three-fourths inch purple contusion.

4 Q. Okay. With respect to the blunt force
5 injuries in the pelvic region, what did you see?

6 A. There were two blue contusions of the interior
7 hip region. Then examination of the genitalia, I saw an
8 area that was lacerated in the posterior fourchette
9 region that measured around one-half inch. And then
10 surrounding this lacerated area there was extensive soft
11 tissue hemorrhage surrounding this laceration. I also
12 examined the anus, and there was focal faint contusions
13 surrounding the entrance of the anus.

14 Q. Okay. Now, with respect to that, I'm going to
15 ask Ruth Johnson to try to look for those photos so we
16 can show those to you.

17 MR. BASKETT: They've already been
18 admitted, I think.

19 Q. (BY MR. BASKETT) Doctor, before we get those,
20 let's go ahead and go down to the blunt force injuries
21 of the extremities. And what did you find with respect
22 to that?

23 A. There was a brown contusion of the left
24 lateral lower leg, small blue contusion to the right
25 thigh, three-eighths inch purple contusion of the left

1 thigh.

2 Q. Okay. Now, with respect to that, is -- it's
3 your opinion that you don't believe that you can date
4 these injuries by the color of them. Is that correct?

5 A. That's correct.

6 Q. Okay. Now, there's been a large contention in
7 this case about coagulation dip problems and DIC. In
8 the past have you autopsied victims or deceased bodies
9 that had, prior to death, a DIC situation?

10 A. Yes, I have.

11 Q. What does DIC mean to you?

12 A. Well, it is a bleeding disorder. And when we
13 perform autopsies on people that have DIC, you'll see
14 hemorrhages within the skin, even in various organs of
15 the body.

16 Q. Are you trained to look for those?

17 A. Yes.

18 Q. If you saw those, would you document them?

19 A. Yes.

20 Q. Did you see any of that with respect to this
21 child?

22 A. No.

23 MR. BASKETT: At this time, Your Honor,
24 we will approach the witness to show her State's Exhibit
25 Number 156 and State's Exhibit Number 162.

1 Q. (BY MR. BASKETT) Do those bear the unique
2 identifying numbers for SWIFS on the autopsy of Isis
3 Charm Vas on October 31st, 2007?

4 A. Yes.

5 Q. 2000, I'm sorry.

6 A. Well, it's -- it's 3854-00, yeah.

7 Q. Okay.

8 MR. BASKETT: At this time let the record
9 reflect that I'm showing this to Defense counsel and the
10 defense expert.

11 THE COURT: 156 and what?

12 MR. BASKETT: And 162.

13 MS. KIRKWOOD: Yes.

14 THE COURT: Okay. State making an offer?

15 MR. BASKETT: Yes. At this time, Your
16 Honor, State would offer into evidence State's Exhibit
17 Numbers 156 and 162.

18 THE COURT: All right. As to those
19 exhibits, does your objections extend to 156 and 162,
20 Ms. Kirkwood?

21 MS. KIRKWOOD: Same objection.

22 THE COURT: All right. Overruled. 156
23 and 162 are admitted.

24 Q. (BY MR. BASKETT) Let the record reflect that
25 I'm holding this exhibit up in front of the bench so

1 that everyone can see. Can you come around here so --

2 A. Sure.

3 Q. Why don't you come to this side so maybe the
4 people in the gallery can even see this. Can you
5 explain what this photograph is showing?

6 A. Again, you've got the area of abrasion that we
7 talked about earlier, but you see the absence of bruises
8 and petechial hemorrhages or rashes on this child that
9 you would expect to see if the child was in DIC or had a
10 coagulopathy.

11 Q. Okay. Let the record reflect that I am now
12 showing you State's Exhibit Number 162. What does this
13 show?

14 A. Routinely we will essentially cut along the
15 back looking for hemorrhage. This is muscle, fat, skin.
16 There's no hemorrhage, so there's not just some
17 uncontrollable bleeding all over the place as you can
18 see by these photos.

19 Q. And does the organ harvest change your opinion
20 with regard to that?

21 A. No.

22 Q. Dr. McClain, let's go down to page 3 again and
23 look at your internal examination and discuss the
24 aspects of that. On page 3.

25 A. Okay. Well, we've shown the head and then --

1 Q. I meant to clue you in there. I'm sorry.
2 Let's look at the internal examination part of your
3 autopsy report at this time.

4 A. Okay.

5 Q. Yes. Go ahead and tell me what you -- what
6 you did with respect to that.

7 A. Okay. I examined all of the internal organs
8 like we talked about before. We remove the organs,
9 examine them, cut them. Of significance, I noted there
10 was severe cerebral edema, and then I did save the brain
11 for the department of neuropathology. I examined the
12 stomach and it contained 3 milliliters of greenish bile
13 stained fluid. Otherwise, the stomach was unremarkable.
14 There was no hemorrhage in the stomach, no ulcers,
15 gastritis, and again, the fluid was greenish color.

16 The bladder was empty, appendix present,
17 kidneys were pale and the fontanel on this child was
18 very tense, which would go along with the cerebral
19 edema. And also on the skull the sutures were slightly
20 spread due to the cerebral edema.

21 Q. Okay.

22 A. Also the lungs, I microscopically noted
23 bronchopneumonia.

24 Q. Okay. Now, Dr. McClain, did you find that the
25 head, central nervous system, neck, body cavities,

1 cardiovascular, respiratory, hepatobiliary,
2 genitourinary, gastrointestinal, lympho --

3 A. Lymphoreticular.

4 Q. -- endocrine and the musculoskeletal system
5 were within normal limits of a child of this age and sex
6 and development?

7 A. Yes, there was no developmental abnormality.

8 Q. Are you trained to look for developmental
9 abnormalities?

10 A. Yes.

11 Q. If you had seen abnormalities on the central
12 nervous system, would you have noted them?

13 A. Yes.

14 Q. If you would have seen abnormalities within
15 the neck, would you have noted them?

16 A. Yes.

17 Q. If you saw abnormalities in the body cavities,
18 would you have noted them?

19 A. Yes.

20 Q. In any of these other systems, would you have
21 noted them?

22 A. Yes.

23 Q. Now, with respect to the lympho -- what -- why
24 don't you pronounce that and explain what that is.

25 A. Lymphoreticular. That's lymph nodes and

1 thymus.

2 Q. Okay. And explain that to the Judge, and what
3 you would do if you found something unusual in that
4 area.

5 A. Well, if I saw a big lymph node, I would have
6 examined it, but --

7 Q. And how would you have examined it?

8 A. You would remove it.

9 Q. And what would you do after you removed it?

10 A. Look under the microscope.

11 Q. Okay. Would you have put it on a -- make a
12 slide? Is that what you're saying?

13 A. That's what -- yes.

14 Q. Okay. Eventually, take a block, make a slide
15 from that? Is that what you're saying?

16 A. Yes. And usually you really don't -- lymph
17 nodes aren't very prominent unless there's, you know,
18 some disease, lymphoma, something like that.

19 Q. Okay. But you're trained to look for those
20 and see if there's anything unusual about that. Is that
21 correct?

22 A. Yes.

23 Q. Now, I wanted to briefly discuss -- we had
24 discussed earlier about the lack of spider bites in your
25 opinion. Did you review Dr. Lew's reports?

1 A. Yes, I did.

2 Q. And -- and she's the deputy chief medical
3 examiner in Dade County, Florida. Is that correct?

4 A. That's correct.

5 Q. And when you reviewed her report, she was not
6 able to find any spider bites either. Is that correct?

7 A. That's correct.

8 Q. Now, let's talk a little bit about what you
9 would do to look for unusual stool in an autopsy.

10 A. Well, you just make a section, you know,
11 through the -- the intestine and look for, you know,
12 whatever color the stool is. And --

13 Q. Okay. Now, when you do that, what part of the
14 autopsy are you at when you do that?

15 A. The way I do it, I open, like, the esophagus
16 all the way down to the stomach and then the upper
17 portion of the duodenum. We take the rest of the
18 intestines off separately before we get to that block,
19 and then I will take some sections -- look, you know,
20 externally for any problems, then cut some lengths of
21 small intestines as well as large intestine, put that in
22 our save jar that we keep. And I don't note anything
23 about melanotic stool.

24 Q. You made no notation of it?

25 A. No.

1 Q. Does that mean it did not exist?

2 A. Yes.

3 Q. If you had seen melanotic stool, would you
4 have documented that?

5 A. I would have commented on it, yes.

6 Q. Now, an autopsy includes three things. It
7 includes observation, documentation, interpretation. Is
8 that correct?

9 A. That's correct.

10 Q. Okay. Now, tell us about what the observation
11 part of your autopsy deals with.

12 A. Well, it's really kind of the gross
13 examination where, you know, you observe, you know, the
14 outer portion of the body, you observe gross -- or
15 gross -- look at the organs. So that's our observation.

16 Q. Okay. Now, with respect to differential
17 diagnosis, when you do an autopsy are you looking for
18 unusual things that might cause you to question whether
19 a certain -- are you looking for disease processes?

20 A. Yes. That's the reason we dissect the organs
21 and look for something that looks unusual.

22 Q. Okay. And what categories do you find with
23 respect to the cause and manner of death? What are you
24 looking for?

25 A. Well, we're looking for either injuries or

1 we're looking for diseases.

2 Q. Okay. And what kind of deaths do you have?
3 Do you have homicides?

4 A. Yes.

5 Q. Suicides?

6 A. These are manners of death. We have homicide,
7 accident, suicide, natural or undetermined. There are
8 five manners of death.

9 Q. Okay. And if you saw something in here that
10 would cause you concern -- that would be of severe
11 concern, what would you do?

12 A. Well, I document what I find at the autopsy.

13 Q. Okay. And then would you look at it later or
14 consult with someone else if you saw something unusual?

15 A. If -- if need be.

16 Q. Now, with respect to -- let's go to the
17 vaginal slides at this -- I mean, the vaginal
18 photographs at this time.

19 The -- let's talk about where -- if there
20 was a melanotic stool, where would that be from,
21 Dr. McClain?

22 A. It would be from an upper gastrointestinal
23 bleed from the stomach.

24 Q. Okay.

25 A. Stomach above.

1 Q. And you discussed already that you didn't find
2 anything remarkable in the stomach. Is that correct?

3 A. That's correct. And the small amount of fluid
4 was green.

5 Q. Okay. Now, if it was a severe bleed that
6 would have caused this type of melanotic stool, would
7 you be able to note that in an ordinary autopsy?

8 A. Yes. You would see it in the intestine itself
9 when you're taking the sections. Plus, the way you get
10 a melanotic stool is to have an upper GI bleed and I
11 don't have an upper GI bleed.

12 Q. Okay. With respect to that -- now, with
13 respect to the brain, did you look for other things that
14 might indicate a stroke, like blood clots or something
15 of that nature?

16 A. Yes. The department of neuropathology
17 examined the brain and they did not find anything that
18 looked like a stroke.

19 Q. Okay. Did you find anything that was -- any
20 type of thrombosis that gave you any type of concern --

21 A. No.

22 Q. -- in the brain?

23 A. No.

24 Q. Okay. Now, with regard to that, if -- what
25 would you be looking for if there was an upper GI bleed?

1 Where do you look for that and what do you look --
2 besides the stomach, do you look anyplace else or just
3 the stomach?

4 A. The esophagus and stomach. That's considered
5 the upper GI.

6 Q. Okay. And what did you do with respect to
7 those?

8 A. Well, I looked at the esophagus and stomach
9 lining and noted that there was some, as I describe it,
10 3 milliliters of greenish bile stained fluid in the
11 stomach. So there's no blood in the stomach.

12 Q. Okay. Now, I'm going to show you what's been
13 marked as State's Exhibits 178, 179, 180, and 181. Do
14 those bear the SWIFS unique identifying number with
15 respect to the autopsy of Isis Charm Vas performed on
16 October 31, 2000?

17 A. Yes.

18 MR. BASKETT: Let the record reflect I'm
19 showing State's Exhibit Number 178 to Defense counsel
20 and the expert -- defense expert. Let the record
21 reflect that I'm showing State's Exhibit Number 180,
22 autopsy, to the Defense counsel and the expert.

23 MS. KIRKWOOD: Yes.

24 MR. BASKETT: Let the record reflect that
25 I'm showing State's Exhibit Number 179 now to Defense

1 counsel and the expert.

2 MS. KIRKWOOD: Yes.

3 MR. BASKETT: Let the record reflect that
4 I'm now showing State's Exhibit Number 181 to Defense
5 counsel --

6 MS. KIRKWOOD: Yes.

7 MR. BASKETT: -- and their expert.

8 THE COURT: Any objection to any of those
9 exhibits?

10 MS. KIRKWOOD: I have no objections to
11 these ones. We received adequate copies of those.

12 THE COURT: Okay. State's 178, 179, 180
13 and 181 are admitted.

14 Q. (BY MR. BASKETT) I'm going to try to show
15 this up so that the Judge and the others in the
16 courtroom can see this. Is this right side up?

17 A. Yes. That's the anal region showing the areas
18 of contusion around the anus.

19 Q. Okay. Is that what you wanted to show with
20 that -- with respect to that picture?

21 A. Yes.

22 Q. Okay. Now, this may be a different angle on
23 this. I want to show you State's Exhibit Number 180.
24 What are you trying to show there?

25 A. That, again, is showing the anus just at a --

1 it's not as close up, but you can still see the
2 contusion, erythema or redness of the anus.

3 Q. Okay. Now, let me show you what's been marked
4 as State's Exhibit Number 178. What are you showing
5 with respect to that picture?

6 A. That's the vaginal area and you can see the
7 dark color, which is contusion.

8 Q. Okay. Now, with respect to -- I'm now going
9 to show you -- let the record reflect that I'm now going
10 to show you State's Exhibit Number 179. What does this
11 show you?

12 A. Here you can see inside. This is the area of
13 laceration, and then you've got contusion around this
14 portion of the vagina. And by definition, a laceration
15 is a tearing of the skin. It's due to blunt trauma.

16 Q. Okay. Do you have anything in your -- that
17 would help us understand the extent of the -- or maybe
18 you've already described it. Have you described the
19 injury to the genitalia?

20 A. Yes. You've got contusion and laceration.

21 Q. Okay. Did you say it was a one-half inch
22 lacerated area of the posterior fourchette, as you
23 called it?

24 A. Yes.

25 Q. Now, with respect to the body organs, let's

1 take, for instance -- describe how you would remove the
2 heart, for instance.

3 A. Well, you first have to make a Y-shaped
4 incision on the body, reflect back the skin, then we
5 remove the chest wall, reflect that back, and then you
6 have exposed the lungs and the heart, the thymus. Also,
7 we open -- further down we have the intestines, liver,
8 or the abdominal organs exposed. Then surrounding the
9 heart is a pericardial sac, and then we open that and
10 then we just cut the heart from the great vessels --

11 Q. Okay.

12 A. -- weigh it, then go through the dissection of
13 the heart.

14 Q. Okay. Now, when you -- when you remove the
15 heart, then you filet it and look at it? How do you do
16 that?

17 A. Well, you remove it and then you dissect it.
18 But we look at the coronary arteries, then the way we
19 open a heart is by blood flow. So we'll open the heart
20 and that way we're able to look at the cardiac valves,
21 and then also examine the myocardium, or the muscle of
22 the heart. Then we'll save a piece of that as well as
23 take a section, put it on cassette, and it goes through
24 histology and then we can look at it under the
25 microscope.

1 Q. Okay. With respect to that, when you examined
2 the heart grossly -- let's look at your report and see
3 what you saw.

4 A. It was unremarkable.

5 Q. Okay. So you're able to look at it, you
6 didn't see anything wrong with it. Do you check for
7 heart disease?

8 A. Yes.

9 Q. Do you check for some serious heart problem at
10 that point?

11 A. Yes.

12 Q. And if you found something serious, what would
13 you do?

14 A. Well, I'd document it.

15 Q. Okay. And would you -- would a slide later
16 tell you something about that or not?

17 A. Well, sometimes a slide may show something
18 that the gross doesn't, and -- but in this case it was
19 still unremarkable.

20 Q. Okay. Now, let's talk about -- let's talk
21 about the lungs. You have a right lung and left lung
22 that you took out. How would you take the right lung
23 and left lung out in an autopsy that you would have
24 performed in 2000?

25 A. Well, we remove organ by organ, and so you cut

1 at the hilum, which is where everything kind of
2 connects, the airways and the vessels. We cut that and
3 then we take the organ and weigh it. Then we'll open up
4 the airways as well as the vessels, examine that for any
5 aspirated gastric contents or any pulmonary emboli, and
6 we'll, what we call bread loaf. We'll slice the lung
7 looking for, you know, anything unusual.

8 Q. Okay. And what does your autopsy report that
9 you found about the lung?

10 A. There was bronchopneumonia microscopically.

11 Q. Okay. Did you notice -- did you note anything
12 about your gross examination of it?

13 A. It was essentially unremarkable. It was
14 congested, but, you know, micro -- microscopically, I
15 noted bronchopneumonia.

16 Q. What page are you referring to on your autopsy
17 report?

18 A. I'm on 4. The microscopic lung.

19 Q. Okay. Let's go -- now, can you pronounce the
20 first word there that you're talking about on the lung?

21 A. Atelectasis.

22 Q. What does that mean?

23 A. Part of the lung tissue has collapsed.

24 Q. Okay. And it -- did you find a historical
25 reason or clinical reason in the records for that?

1 A. Well, been on a respirator a while and you
2 just see that.

3 Q. Did you also find some congestion?

4 A. Yes.

5 Q. Okay. Now, were the -- were the lungs heavy
6 at autopsy? Did you --

7 A. Yes, they are a little heavy.

8 Q. Okay. And let's look at the kidneys. What
9 did you do with respect to the kidneys and how would you
10 remove the kidneys in an autopsy that you would have
11 performed in 2000?

12 A. Well, we, you know, remove the kidney, we take
13 it out of its capsule, put it on the scale, and then
14 examine it. You know, cut it in two and then make some
15 additional sections of the kidney looking for anything
16 unusual, and then we take a section of the kidney and
17 put it in a cassette and we make a microscopic slide.

18 Q. Okay. Now, with respect to the kidney, what
19 did you note?

20 A. It was just sort of pale, but -- and it was a
21 little congested.

22 Q. Okay. When you say you cut it up, do you use
23 the bread loaf method on the kidney or some other
24 method?

25 A. Yes.

1 Q. Okay. Was there anything that -- are you
2 trained to look at the brain, the heart, the lungs, the
3 kidneys for anything that could cause death outside
4 of -- you know, a disease process. You're trained to
5 look for that. Right?

6 A. Absolutely.

7 Q. Did you look -- did you see any disease
8 process in any of these organs that changed your mind
9 about the cause of death?

10 A. No.

11 Q. Let's go back to page number 5 on your autopsy
12 report. Can you tell us what your findings were on
13 Number 1?

14 A. Blunt force injury to the head. We had
15 contusions, which is another name for bruising. We had
16 the subscalpular hemorrhage, which is hemorrhage under
17 the scalp. We had subdural hemorrhage. We had recent
18 intraventricular hemorrhage, there were scattered
19 acutely necrotic neurons consistent with global hypoxic
20 ischemia. There were a few petechial hemorrhages of the
21 pons, retinal hemorrhages and perioptic nerve
22 hemorrhage.

23 Q. Okay. With respect to findings under Number 2
24 what did you find?

25 A. We had blunt force injury to the pelvis.

1 There's a laceration of the posterior fourchette with
2 expected soft tissue hemorrhage, faint contusions
3 surrounding the anus, and additional contusions in that
4 region.

5 Q. Okay. Under Number 3 what did you find?

6 A. There were blunt force injuries of the trunk,
7 back and extremities consisting of various contusions.

8 Q. Now, does -- when you perform an autopsy, do
9 you rule out alternative diagnoses?

10 A. Yes.

11 Q. Okay. And that's part of the autopsy process,
12 is it not?

13 A. That's correct.

14 Q. Okay. Now, with respect to -- now, with
15 respect to the brain injury that you found, you had
16 indicated in the photographs to the Judge and to the
17 various members here in the court that there were red
18 areas. What do those red areas represent to you as a
19 forensic pathologist?

20 A. They're blunt force injuries indicating an
21 impact point.

22 Q. Okay. Now, does the red areas indicate
23 anything to you, the fact that they're red?

24 A. Well, there's blood in them.

25 Q. Okay. Can you tell anything whether it's

1 recent or -- from that or anything along those lines?

2 A. It's a bright red, a few were taken
3 microscopically, and the red blood cells were still
4 recognizable and intact, so it's recent.

5 Q. Okay. With the brain injury -- and you find
6 that this is trauma to the brain. Is that correct?

7 A. Yes.

8 Q. Okay. With respect to the trauma to the brain
9 that you -- on the brain that you autopsied of Isis
10 Charm Vas, did you review some materials to try to help
11 you determine what the timing of that injury might have
12 been?

13 A. I believe it's -- it's recent. I also
14 reviewed the -- kind of the investigative data. I think
15 it's an extensive injury, and as soon as the child would
16 have got that injury, they would not be acting normally
17 and most likely unresponsive.

18 Q. Okay. Now, let's define what you mean by not
19 acting normally.

20 A. Unresponsive, out --

21 Q. Okay.

22 A. -- you know.

23 Q. And would this be obvious very soon after the
24 injury to a caretaker?

25 A. In my opinion, yes.

1 Q. Did you review Mr. Lopez' statement? The
2 Defendant and Applicant in this case, did you review his
3 statement that he gave to the police at the hospital?

4 A. I reviewed some of his statements. I think I
5 have.

6 Q. Okay. Do you remember reviewing a statement
7 where he indicated the child sucked and took some
8 nourishment that morning on Saturday morning?

9 A. Yes.

10 Q. Okay. Do you believe with the injuries that
11 you saw that she could have done that? Would that be
12 one of those things that would not be -- she could not
13 have done?

14 A. My opinion, after this fatal injury, she would
15 not be able to drink.

16 Q. Now, with respect to that, did you get some
17 further documentation in 2009 from our office that had
18 some redacted areas?

19 A. Yes, I did.

20 Q. Would you pull that out of your file, please,
21 ma'am.

22 A. Yes, I have it here.

23 Q. Okay. Would you read off the main import of
24 that redacted area?

25 A. The main part? After an interview, Mr. Lopez,

1 one, admitted he thoroughly cleaned feces from the
2 baby's vagina, and in doing so, had to penetrate the
3 vagina with his fingers. In addition, he acknowledged
4 while doing this cleaning he was frustrated with the
5 whole situation of being stuck with Dr. Vas' children,
6 and may have been too rough with his vaginal cleaning
7 and caused the genital trauma as indicated by the health
8 professionals who examined her. Number 2, he admitted
9 slapping the baby when he discovered her listless. He
10 says he slapped her in the face more than once, and
11 because of his panicked state, may have hit her too hard
12 and shook her later too hard. He even acknowledged that
13 both were of sufficient force that it could have caused
14 her death.

15 Q. Okay. What does that mean to you?

16 A. It's certainly consistent with everything I
17 found at autopsy.

18 Q. Okay. So that statement is consistent with
19 what you found at autopsy. Is that correct?

20 A. That is correct.

21 Q. Now, can you tell the Court what -- let's look
22 at the toxicology that you found here briefly on page 6.

23 A. Okay.

24 Q. In the blood you found -- what was found?

25 A. Well, we check the blood for alcohol, acetone,

1 there was none found. We also did a cannabinoid screen,
2 which is for marijuana. That was negative. And the
3 only thing found in the drug screen was 0.05 milligrams
4 per liter of lidocaine.

5 Q. Okay. Does that mean anything to you?

6 A. They use that in ERs.

7 Q. Okay. So would that -- on a child of this age
8 in this kind of condition, would that surprise you?

9 A. No.

10 Q. Would that affect your findings in any way?

11 A. No.

12 Q. What was your determination as to the cause of
13 death?

14 A. Cause of death was multiple blunt force
15 injuries.

16 Q. What was the manner of death?

17 A. Homicide.

18 Q. Now, with respect to Dr. Lew's report, did you
19 review that report as -- with respect to what she felt
20 the timing was?

21 A. Yes, I have the report right here.

22 Q. Okay. Can you tell us what Dr. Lew felt the
23 timing of that -- of the injuries were?

24 A. Yes. Let me go ahead and -- and here is her
25 comment. Isis Vas was left in the care of an adult

1 couple, DeAnn and Ernest Lopez. Dr. Vas, Isis' mother,
2 called 30 minutes prior to DeAnn leaving home to go
3 shopping and Isis was fine at that time. Mr. Lopez
4 became the sole adult caretaker beginning at 10:15 a.m.
5 Mr. Lopez called the answering service for Dr. Karmen
6 Werner, pediatrician, at 11:00 a.m. to report that Isis
7 was not breathing. Within 45 minutes, a child who was
8 awake and alert, and by history, was drinking fluids,
9 stopped breathing and had blood trickling out of her
10 vagina -- vaginal region. A laceration of the posterior
11 fourchette and retinal hemorrhages were diagnosed at the
12 hospital.

13 Isis survived 24 hours from the time of
14 the 911 call and was pronounced dead at 10:30 a.m. the
15 following day. The autopsy disclosed multiple
16 ecchymosis and confirmed blunt head trauma, retinal
17 hemorrhages and anogenital injuries. The blunt head
18 trauma would not be consistent with Isis being awake,
19 alert and apparently normal. There are no accounts that
20 Isis was behaving abnormally when DeAnn left the home.
21 Therefore, the head injury occurred within that
22 45-minute period after DeAnn left. The laceration of
23 the posterior fourchette bled and the presence of blood
24 emanating from the genital region prompted the sexual
25 examination. The genital laceration was the -- was the

1 result of blunt trauma from a penetrating force that
2 stretched and tore the small vaginal opening.

3 Q. Do you concur with Dr. Lew's conclusion with
4 regard to those?

5 A. Yes, I do.

6 Q. Would you have reviewed the sexual assault
7 nurse's -- examiner's documentation or findings when you
8 did the autopsy? I mean, or -- or sometime during the
9 autopsy process?

10 A. Not during the autopsy process. I think I got
11 them later.

12 Q. Later? And do you know if you reviewed those
13 before your final report or not? I can't remember.

14 A. I can't remember.

15 MR. BASKETT: I'm going to pass the
16 witness at this point.

17 MS. KIRKWOOD: May I have a quick --

18 THE COURT: Let's take a 15-minute break.

19 MS. KIRKWOOD: Thank you.

20 THE COURT: You can step down, Doctor.

21 (Recess taken)

22 (Open court, Counsel and Defendant
23 present, no jury)

24 THE COURT: Okay. Let's get back on the
25 record at this time. Before we -- the cross-examination

1 commences, I'm just going to state for the record
2 there's a -- there was an exhibit that was marked
3 yesterday and it was marked as State's Exhibit 6. It
4 was a photograph, and Ms. Kirkwood introduced it. It
5 was offered and it was admitted at that time. Just to
6 clear up the record, we're going to relabel that as
7 Petitioner's Number 34 to clearly indicate that it's her
8 exhibit and that's already been admitted.

9 MR. MURPHY: Right. As the Court
10 recalls, I brought that to the attention at the time
11 that it was -- she was offering it. It's still only
12 marked, as far as I knew, as State's 6. I mentioned
13 that on the record at the time.

14 THE COURT: It will now be known as
15 Petitioner's Exhibit 34.

16 MR. MURPHY: 34?

17 THE COURT: It's been marked and it's
18 already been admitted.

19 MR. MURPHY: Yes, sir. Thank you, Judge.

20 THE COURT: Okay. You may start your
21 cross-examination, Ms. Kirkwood, when you're ready.

22 MS. KIRKWOOD: Yes, but I'd like to --
23 maybe I won't. I'll keep them handy.

24 CROSS-EXAMINATION

25 BY MS. KIRKWOOD:

1 Q. Dr. McClain, I'd like to run through, first,
2 the -- the blunt force injuries that you have identified
3 on the autopsy report.

4 A. Okay.

5 Q. Okay. So blunt force injuries to the head.
6 We have these relatively small areas of contusion. Is
7 that right?

8 A. Yes.

9 Q. On the forehead?

10 A. Yes.

11 Q. And I'd like to know what you make of those,
12 what you think might have caused them. Not just blunt
13 force injury, but there's been -- they're fairly small.
14 What -- do you see any pattern or any idea of what those
15 might be --

16 A. There's no pattern.

17 Q. Pardon?

18 A. There's no pattern, but it's a blunt force
19 injury, so either the head has struck an object or an
20 object has struck the head.

21 Q. And it's a whole bunch of little ones all
22 over, so would it be something poking at the head or do
23 you have -- do you see any -- any -- do you have any
24 idea as to what kind of impact this could be?

25 A. It's just blunt force.

1 Q. Okay. And so you don't know if it's with a
2 big object or a small object or sharp object?

3 A. Certainly not sharp --

4 Q. Okay.

5 A. -- or you would have a cut or a stab.

6 Q. Okay. How about small or big?

7 A. Well, it's not like an abrasion where that's
8 more of a pattern that you can correspond with an
9 object. It -- it's just an impact point.

10 Q. Okay. And are those the same or approximately
11 the same -- I know there are some variations, but are
12 those approximately the same contusions on the face that
13 Ms. Gorday noted on her original bruise chart?

14 A. I would have to look at her chart. I know
15 there were some.

16 Q. Okay. Okay.

17 MS. KIRKWOOD: I'm not doing much better
18 than you are here.

19 Q. (BY MS. KIRKWOOD) Would it be helpful for me
20 to put a bruise chart up?

21 A. Yes.

22 Q. Okay. Sure.

23 MS. KIRKWOOD: I need Ruth again. Thank
24 you, Ruth.

25 And I wish I had another copy. Do you

1 have your medical file with you?

2 MR. MURPHY: You want the bruise chart?

3 MR. BASKETT: I saw it yesterday.

4 MS. KIRKWOOD: I don't know that you guys
5 can see it, but this is Nurse Gorday's bruise chart here
6 in which -- is that all right if I stand up so I can see
7 this?

8 THE COURT: Yes, you may.

9 Q. (BY MS. KIRKWOOD) And you're welcome to come
10 down, too, if you like. Basically marks -- a bunch of
11 little marks on the head. They're marked as brown.
12 They're .5 by .5 centimeters. Pretty much all .5 by .5,
13 a few variations, but they're all marked as brown. And
14 would those be the same ones that you are seeing at the
15 hospital? I also have your chart if you'd like to --

16 A. Well, some may be and some may not be.

17 Q. Okay.

18 MS. KIRKWOOD: Sure. If you want to put
19 this one up.

20 Q. (BY MS. KIRKWOOD) This is your chart. I
21 don't know how carefully everyone marked them. Now,
22 yours has the abrasion on the back of the head and we'll
23 get to that. And I'd like to go back to the other one,
24 and I think you would agree that this one does not have
25 the abrasion at the back of the head. Is that right?

1 A. Doesn't look like it.

2 Q. Okay. So is this -- are these roughly the
3 same -- I know that they move around a little bit on the
4 body, but are these roughly the same contusions that you
5 and Ms. Gorday are noticing?

6 A. Pretty close, but I've got some that look, you
7 know, like they're in different locations and she's got
8 some that look like they may be in different locations.

9 Q. Okay. Do you think they're -- do you think
10 that they're necessarily new ones or is part of it just
11 when you're drawing a sketch you're not exactly
12 measuring exactly where they are?

13 A. Sometimes over time you may see more appear.

14 Q. Yes. Okay. So now, the ones that she had
15 marked are all brown, and the ones that are the same as
16 yours have now turned purplish. Can you explain why
17 they would -- and also yours are larger than hers; hers
18 are .5 centimeters, yours are half an inch, which is
19 maybe double or triple in size?

20 A. Well, it's just -- you know, over time you can
21 see bruises -- more develop.

22 Q. Okay.

23 A. So -- we -- we've seen that before.

24 Q. Okay. Well, let's talk about the timing of
25 them. She has them marked as brown. Do you think it's

1 likely that those had occurred within the 40 minutes
2 before arrival at the hospital or maybe an hour?

3 A. Well, like I said before, and I think
4 Dr. Squier also, you really can't use a color to, you
5 know, date a bruise.

6 Q. That's correct, but -- but I think in the
7 article that you provided, that although that you can't
8 date precisely, it had said something like two to four
9 days for the -- for a brown/yellow. Not necessarily,
10 but moving it back to -- and I agree it can go fast.
11 But moving it back to that hour, hour and a half, would
12 you agree that that's pretty fast to be -- to be
13 uniformly brown all over?

14 A. Not necessarily.

15 Q. Can you cite me any article or reference that
16 has found bruises turning brown within an hour?

17 A. I can just say that I've seen where you cannot
18 time a bruise by the color.

19 Q. I understand that. But all the same, there
20 are certain chemical reactions that have to take place
21 in order for bruises to change color -- to appear and to
22 change color. Would you think that an hour was pretty
23 fast for all the bruises to appear and to turn brown?
24 Would that be fast to you or slow or about medium?

25 A. Well, it depends on, you know, how deep the

1 bruise is, how the body reacts. I can't give you a
2 specific answer.

3 Q. Okay. And so it's really -- when you're
4 looking at these, you don't really know how old they
5 are, is that right, from looking at them?

6 A. From looking at them, I feel like they're, you
7 know, fairly recent certainly, and then the ones under
8 the scalp I was able to take --

9 Q. We'll do the subscalpular after.

10 A. -- and do some sections.

11 Q. And that -- well, let's -- let's just take
12 care of the ones on the head first and we'll go through
13 each of the areas. You thought they were fairly fresh,
14 the nurse thought they were brown. I believe there's a
15 notation in the medical record she thought they were a
16 week or two out. You think -- are you saying you
17 believe that they were within the hour or you just think
18 they could have been in the hour?

19 A. They could have been.

20 Q. Could have been. Okay.

21 Now, if these bruises or marks or most of
22 them had been seen by the caretakers two and a half days
23 earlier, would that factor into your determination of
24 how old they were?

25 A. If they were accurately describing them. It's

1 possible it could be that far out.

2 Q. Okay. And I imagine -- you said you've looked
3 at the investigative files, so you are aware that the
4 mother told the police department, at least, that these
5 were spider bites or insect bites occurring five days
6 earlier?

7 A. They're not spider bites.

8 Q. Okay. And so -- and so Dr. Vas was clearly
9 wrong on that one, in your view?

10 A. Yes.

11 Q. Okay. And the other three caretakers in the
12 period, which is Ernie Lopez and his wife DeAnn and her
13 sister Mary, all describe them in various ways as
14 bumps -- reddish bumps, some thought they had a funny
15 scabby center, things like that, but they all describe
16 them as having been present the two and a half days the
17 Lopezes had the child. Would your observation of those
18 bruises be consistent with that time period? Bruises,
19 marks, whatever?

20 A. I just want to reiterate, those are not insect
21 bites.

22 Q. Okay.

23 A. They're bruises.

24 Q. That's fine. That's fine. We really don't
25 care what they are. We're more interested in the

1 timing, because if they were there when the baby came
2 to --

3 MR. MURPHY: Well, Your Honor --

4 MS. KIRKWOOD: Okay. I'll make a
5 question.

6 Q. (BY MS. KIRKWOOD) Okay. So you're very
7 strong that they are not insect bites?

8 A. Correct.

9 Q. And on the age, what time period?

10 A. It's variable.

11 Q. Variable. So it could be any time up to a
12 week?

13 A. I don't think a week.

14 Q. A week? Four or five days?

15 A. No. Probably fairly recent to a few days.

16 Q. A few days. Okay. That's consistent.

17 Now, did you do any histology on these
18 bruises to find out what they are?

19 A. No, because they're on the face.

20 Q. Okay. I think that there's a -- a little
21 puncture system that one can use and really not mark up
22 the face very much. Did you consider doing that?

23 A. We don't have that system. And we -- we
24 routinely do not take, you know, slides or specimens
25 from the face.

1 Q. Since this was a homicide case in which Ernie
2 would be facing capital murder charges, would it have
3 been worthwhile to take a microscopic sample of at least
4 one of those marks?

5 A. No.

6 Q. No? Why not?

7 A. Because I've got plenty of other impact
8 points. I've got a subdural hemorrhage, I've got plenty
9 of blunt force injuries.

10 Q. Okay. Well, would you say that these are
11 significant or insignificant? Do you think these
12 related to the cause of death -- well, let's -- let's
13 assume that they are contusions and blunt force trauma.
14 Do you think these contributed to the child's death?

15 A. They're very small. Probably not.

16 Q. Okay. Okay. So we had the marks on the head
17 that are small, they haven't been dated, there's been no
18 histology, and so is it fair to say we really -- we have
19 no objective evidence as to what they are or how deep
20 they are?

21 A. I disagree with that. They're a contusion.
22 They're a bruise.

23 Q. Okay. But we have no histology to confirm
24 that?

25 A. I don't need histology to look at a bruise.

1 Q. Okay. But the one thing about which you are
2 absolutely certain is that Dr. Vas incorrectly diagnosed
3 them as insect or spider bites?

4 A. That is my opinion.

5 Q. Okay. All right. Okay. Let's move on to the
6 next area. We've got the back of the head, and I assume
7 that that -- that that same analysis applies to all the
8 little marks around the head?

9 A. Yeah, the real small ones.

10 Q. Okay. So let's move to the bigger ones.
11 Let's do the abrasion on the back of the head first. As
12 you are probably aware, many of the doctors have
13 testified that they felt -- well, let's do the
14 coagulopathy first. First of all, do you agree that
15 this child had a coagulopathy, at least at some point
16 while she was in the hospital?

17 A. Yes.

18 Q. Okay. And a PTT of over 212, is that slightly
19 unusual or highly unusual?

20 A. I don't get into PTT. I'm usually -- I'm a
21 forensic pathologist and all my people are dead. We
22 don't run PTTs.

23 Q. Okay. I'm just going to give you the normal
24 figures. The normal figure is 27 to 39.7 and hers is
25 over 212, which means that the instrument runs out.

1 It -- it can't time it. It's too high to be timed.

2 Would that seem to be a significant coagulopathy to you?

3 A. Well, again, I don't get into a PT, PTT. It's
4 a useless test after someone's dead.

5 Q. Okay. And the prothrombin time, which is
6 approximately double than normal -- well, let me ask you
7 first, do you accept these lab reports as correct?

8 A. I would assume they are. I'm sure they -- the
9 lab is probably accredited.

10 Q. It is.

11 A. Okay.

12 Q. Northwest Texas. So -- okay. So we have a
13 child with a -- would you agree -- would you agree
14 substantial coagulopathy or you just want to say
15 coagulopathy and limit it to that?

16 A. Just coagulopathy.

17 Q. Okay. What happens when a child has a
18 coagulopathy? What does a coagulopathy do? What does
19 it affect?

20 A. Well, again, it's bleeding.

21 Q. Does it increase the likelihood of bleeding?

22 A. Can.

23 Q. Okay. And does it increase the likelihood of
24 bruising?

25 A. Can. Yes.

1 Q. Can a person with a coagulopathy bruise in
2 normal handling?

3 A. Yes.

4 Q. Okay. Do you have any idea when this child
5 developed the coagulopathy?

6 A. No.

7 Q. Okay. There were other lab tests at the
8 hospital that were abnormal, and if it's not your area
9 you can just tell me, but Albumin, AST, ALT, these are
10 the ones that are really strikingly unusual.

11 A. I'll leave that up to the pediatricians.

12 Q. Okay. White blood cell count and so on?

13 A. Yes.

14 Q. Okay. All right. But if they say high and
15 low, you would agree that there's something abnormal
16 going on in the child?

17 A. If it's outside of normal values.

18 Q. Pardon?

19 A. If it's outside of normal values, yes.

20 Q. Yes. Okay. Do you know what a low Albumin
21 would mean?

22 A. In this case, no.

23 Q. Okay. Hers is 2.5, which is fairly low,
24 although it's -- I'll have to look them up myself here.
25 Do you know how long it would take for Albumin to reach

1 that stage?

2 A. No.

3 Q. Okay. The same with the AST, ALT. Those are
4 extraordinary. 215 versus a range of 15 to 41 normal,
5 ALT 106, normal range 11 to 39. Do you have any idea
6 how long it would take for -- for those lab results?

7 A. No. Like I said, post mortem all of those
8 tests are not valid, so I don't deal with that. You
9 need to talk to a clinician.

10 Q. Okay. But when you say they're not valid I
11 take it you mean that you can't --

12 A. You can't run them.

13 Q. Pardon?

14 A. You can't run them post mortem.

15 Q. Exactly. Exactly. But they're still valid
16 for the condition of the child while she was in the
17 hospital?

18 A. Yes. But after they're dead you can't run
19 those tests.

20 Q. Right. But did you look at these lab tests in
21 reaching your conclusions that the child died from blunt
22 force injury?

23 A. I don't think I did beforehand. Because it
24 was such a clear case of blunt force injury, I don't
25 need a number to tell me --

1 Q. Okay.

2 A. -- when you've got bruising and abrasions and
3 blunt force injury.

4 Q. Okay. But we've already agreed that -- that a
5 coagulopathy can increase bruising or bleeding and that
6 it can occur even in normal handling in a child with a
7 coagulopathy. So to the extent that you are basing your
8 conclusion of blunt force trauma on bleeding, it would
9 appear that the presence of a coagulopathy might affect
10 that -- your conclusion -- or should be factored into
11 your --

12 A. It's well known that a coagulopathy can occur
13 after blunt force injuries of the head, and that's my
14 opinion.

15 Q. Yes. And you provided a paper to that extent
16 and I -- I agree that it's well established.

17 THE COURT: Okay.

18 MS. KIRKWOOD: Okay. Sorry.

19 THE COURT: Be sure you ask a question
20 now.

21 MS. KIRKWOOD: Okay. All right.

22 Q. (BY MS. KIRKWOOD) Question. Have you seen
23 any research materials indicating in which a
24 coagulopathy of this extent, over 212, has been found in
25 a child with alleged head injury?

1 A. I -- I don't know the answer to that. I
2 haven't seen anything.

3 Q. Okay.

4 A. I don't know one way or the other.

5 Q. Okay. Would you agree that the article that
6 you gave me -- and I have forgotten the name, but I
7 think it's by Kent Hymel. Is that correct?

8 A. I'd have to look at my -- I haven't got that
9 thing memorized.

10 Q. Okay. I don't -- I don't have it memorized
11 either, but I do have it here. So --

12 A. I just know it's known that you can have that
13 in head trauma. I believe Dr. Squier also agreed with
14 that.

15 Q. Pardon?

16 A. I think Dr. Squier agreed with that too.

17 Q. Oh, absolutely. I think everybody agrees with
18 that. The issue is how much. And the issue is what
19 impact that will have. So --

20 THE COURT: Next question.

21 MS. KIRKWOOD: Let me look this up and
22 then I can ask my question.

23 THE COURT: Please don't be
24 argumentative. Just ask your questions.

25 MS. KIRKWOOD: Okay.

1 Q. (BY MS. KIRKWOOD) I'm sorry. I have the
2 wrong article. I'll see if I can get to it. But I
3 think that -- okay.

4 Okay. So you agree -- let's talk about
5 the area of abrasion on the back of the head. That
6 abrasion -- I think we looked at the chart up here and I
7 think you agree that the abrasion did not appear on the
8 back of the head in the nurse's first chart?

9 A. She doesn't have it there.

10 Q. Okay. And do you know whether she was a
11 careful nurse examiner? Did you have any sense whether
12 she was a careful nurse examiner who recorded bruises
13 and contusions?

14 A. I have no idea.

15 Q. Okay.

16 MS. KIRKWOOD: Let me show some pictures
17 here. This is Petitioner's Exhibits, let's see, 35, 36,
18 37 and 38. I'm going to give you a copy.

19 MR. BASKETT: Thank you.

20 MS. KIRKWOOD: And I'm going to have
21 these admitted.

22 THE COURT: Okay. You do it to the
23 Court.

24 MS. KIRKWOOD: I'm sorry.

25 THE COURT: Okay? Your Honor, I --

1 MS. KIRKWOOD: Your Honor. Your Honor, I
2 ask to admit Petitioner's Exhibits 38 through -- I'm
3 sorry -- 35 through 38.

4 THE COURT: All right. I have here
5 Petitioner's Exhibits 35, 36, 37, and 38. Are those the
6 exhibits you're seeking admission of?

7 MS. KIRKWOOD: Yes, they are.

8 THE COURT: Any objection?

9 MR. BASKETT: No objection.

10 THE COURT: Petitioner's Exhibits 35, 36,
11 37 and 38 are admitted.

12 MS. KIRKWOOD: Okay. And I wonder -- do
13 I have an extra set of those? I thought I did. Is it
14 all right if I approach the witness so she can --

15 THE COURT: Sure.

16 Q. (BY MS. KIRKWOOD) Would you prefer to have a
17 copy with you?

18 A. Either way.

19 Q. There you go. Okay. 35, this is a picture of
20 the baby. They were photographing, I think, something
21 on the back of its neck, but they actually got a pretty
22 good shot of the back of the head. Does that show an
23 abrasion? That's on the 28th, the day of hospital
24 admission.

25 A. The area is kind of all black in that area.

1 Q. It is a bit dark, but I think -- would you
2 like to come up here?

3 A. You know, I can't tell what all this is. It's
4 just black. It's just, you know, obscuring the area of
5 the abrasion.

6 Q. Okay.

7 A. And I don't know what it is.

8 Q. Okay. But -- but you think you see an
9 abrasion there? The nurse didn't mark it. This is what
10 she's looking at as she did it.

11 A. Well, you've got that black material. I don't
12 know. It could --

13 Q. I think that's just a shadow.

14 A. It could be there. I can't say one way or the
15 other with this black.

16 Q. Okay. Okay. And that's -- that's -- so we
17 don't know -- we can't tell whether it was there on the
18 28th. Is that -- is that fair?

19 A. Right. On that one.

20 Q. Yeah. Let's try the 29th.

21 A. That looks like it right there.

22 Q. You think it might be --

23 A. It's got hair covering it.

24 Q. You think it might be appearing there?

25 A. Yes, there it --

1 Q. Okay.

2 A. -- is right there.

3 Q. Okay.

4 A. You have hair over it and we -- there it is.

5 Q. Okay. And so -- and so -- it's a -- it's a
6 slight appearance there, I would agree. And it's a
7 slight appearance, it looks like it might be beginning
8 there, but -- but it's a -- it's a slight redness that's
9 appearing there, and then by the time we get to
10 autopsy --

11 MR. MURPHY: Are we asking a question or
12 are you --

13 MS. KIRKWOOD: Yeah. She's putting it
14 up.

15 THE COURT: Counsel, again --

16 MS. KIRKWOOD: I'll sit down again.

17 THE COURT: -- don't -- think about what
18 you're doing.

19 MS. KIRKWOOD: Okay.

20 THE COURT: Okay? Don't -- don't just --
21 don't make standing commentary.

22 MS. KIRKWOOD: Sorry.

23 THE COURT: All right. You have to ask a
24 question.

25 MS. KIRKWOOD: Okay.

1 THE COURT: Please.

2 Q. (BY MS. KIRKWOOD) On the -- this is at
3 autopsy. Is it much more visible there?

4 A. Yes.

5 Q. Several doctors have testified that this is a
6 fairly standard artifact from lying on the bed in the
7 hospital, particularly in a child with a coagulopathy.
8 Would you agree that that's a possibility?

9 A. No.

10 Q. Okay. And why not?

11 A. I haven't seen it. I've done a lot of
12 various, you know, autopsies on children that have been
13 laying there. That's an abrasion. That's not just that
14 area. You've got blunt force impact below that. You've
15 got full thickness contusion of that scalp and on
16 that -- back of that skull.

17 Q. So on an abrasion, are you saying that someone
18 hit the baby with something on the back of the head?

19 A. Could have. Uh-huh, as a scrape. You know,
20 remember when you were a kid and you fall down and you
21 scrape your knee? You don't see it very much at the
22 beginning, but then it gets worse.

23 Q. That's true, but this child has a
24 coagulopathy.

25 THE COURT: Okay. Again. Again.

1 MS. KIRKWOOD: Okay. Okay. Does --

2 THE COURT: When you say -- when you
3 preface your question -- or if it's a question with
4 "but," to --

5 MS. KIRKWOOD: I'm sorry.

6 THE COURT: -- to me, that's
7 argumentative. All right? And every time you start
8 with "but," I'm going to consider that -- that you're
9 being argumentative.

10 MS. KIRKWOOD: Okay.

11 THE COURT: Okay. Just -- just ask
12 your --

13 MS. KIRKWOOD: Yes. I --

14 THE COURT: -- your cross-examination
15 questions.

16 MS. KIRKWOOD: I understand.

17 THE COURT: I'm not cutting you off.
18 It's just the way you're handling it, it appears to be
19 argumentative and that's prohibited.

20 MS. KIRKWOOD: Okay.

21 THE COURT: Okay.

22 MS. KIRKWOOD: Okay. It's a "but." I
23 couldn't figure out what I was doing. I was thinking of
24 it as just an introductory statement with a question.
25 I'll remove the "buts" and try to make it just a

1 question.

2 Q. (BY MS. KIRKWOOD) Do you agree that a child
3 with a coagulopathy is going to bleed more easily at any
4 pressure point?

5 A. Yes, they can bleed more easily.

6 Q. Have you autopsied children who have had PTTs
7 of over 212 while in the hospital?

8 A. I don't know if I have or not.

9 Q. Is it customary for you to look at the lab
10 reports before doing the autopsy?

11 A. A lot of times we don't have the lab reports.

12 Q. Do you know how long it was between the time
13 that you conducted the autopsy and -- and when you
14 prepared your final autopsy report?

15 A. Let's see. I don't know if we were dating
16 back then. Looks like we mailed something out
17 March 6th, 2001. So that would be the -- you know, if
18 it's complete, March 6th, 2001, is when -- looks like
19 they mailed out a copy. So I know it was complete by
20 then.

21 Q. So -- so in those five months, would you have
22 had time to obtain the -- the lab reports and other
23 hospital records?

24 A. Yes. Uh-huh.

25 Q. Do you know whether in those hospital records

1 there were other signs that the child was bleeding,
2 possibly due to a coagulopathy?

3 A. No.

4 Q. There are reports in the nursing records that
5 the child had frank red blood, fresh -- frothy red
6 blood, fresh blood, descriptions of that nature from the
7 ETT tube at approximately from 12:40 on the day of
8 admission on. Does that have any significance to you?

9 A. I've seen pulmonary edema fluid being mistaken
10 for blood. We see that extreme, so it may or may not
11 have been blood.

12 Q. Okay. Let's assume for the moment that it was
13 blood. Would that be unusual in your view?

14 A. It -- well, it would be. You usually don't
15 see blood in an endotracheal tube.

16 Q. And would that go hand in hand or be
17 consistent with the coagulopathy and the lab reports?

18 A. I've never seen it in a coagulopathy. I have
19 no opinion.

20 Q. Would it be consistent with certain types of
21 hemorrhagic pneumonias?

22 A. We don't have, really, a hemorrhagic
23 pneumonia. We've got a pneumonia.

24 Q. Did -- did you receive the cultures from
25 Northwest Texas Hospital either before doing your

1 autopsy report or more recently?

2 A. I'm sure I did.

3 Q. There is a throat culture or an aspirate for
4 Klebsiella pneumonia. Did you see that one?

5 A. Yes.

6 Q. And did that have any significance to you?

7 A. You can see it with people on ventilators.

8 Q. Yes. And in your opinion, how long does it
9 take for ventilator pneumonia to develop?

10 A. Doesn't take long. We see it a lot. We have
11 people commit suicide and they have them on the
12 ventilator, and they're doing organ harvesting and
13 they've got pneumonia. So it's quite frequently seen.

14 Q. Do you have any references for the time period
15 in which ventilator pneumonia typically develops?

16 A. I don't have any references. I just know I
17 see it a lot. After 17 and a half years, you know, they
18 usually harvest organs in, oh, you know, a day or two
19 and we see pneumonia.

20 Q. Okay. And do you know what kind of pneumonia
21 you see?

22 A. I don't always culture it, no.

23 Q. Okay. Would it be possible to culture the
24 lungs to determine what kind of pneumonia we -- was
25 present?

1 A. You can.

2 Q. And did you do that in this case?

3 A. No.

4 Q. Okay. There's another -- the one subgaleal or
5 subscalpular hemorrhage is directly beneath the area of
6 abrasion. Is that right?

7 A. Correct.

8 Q. Okay. And that one we -- we have a
9 disagreement on when or how. Where's the other -- the
10 other one, if I understand, posterior -- you'll have to
11 say it -- occipital --

12 A. Occipital.

13 Q. Yes. Thank you.

14 A. That's towards the back.

15 Q. Towards the back.

16 A. And parietal -- is that what you're talking --

17 Q. No.

18 A. Which one?

19 Q. It's the second subscalpular. Is subscalpular
20 another word for subgaleal?

21 A. Yes.

22 Q. Okay. Good.

23 A. Parietal occipital is around this region.

24 Q. Okay. And that's the one you showed the
25 pictures of, and there are also a lot of small red dots

1 around it. Is that right?

2 A. Well, there's a discrete impact point.
3 There's not a whole bunch of red dots. You've got
4 subscalpular area there that doesn't have a bunch of
5 dots, but then you've got the impact points. So it's
6 not like the whole undersurface of the scalp is covered
7 with red dots.

8 Q. No, but there are a number of red dots on the
9 scalp in addition to the larger area of -- of bleeding.
10 Is that right?

11 A. Well --

12 Q. Shall I get the picture out?

13 A. Yes.

14 Q. Okay.

15 MS. KIRKWOOD: Where did the pictures go?
16 See if I've chosen the right one. I think I can. This
17 is the one that shows it most clearly, I think.

18 MR. MURPHY: Are we --

19 MS. KIRKWOOD: Yes. If you could show
20 that and that is State's Exhibit 161.

21 MR. MURPHY: I'm sorry. Is that already
22 in evidence or --

23 MS. KIRKWOOD: It's already in evidence.
24 It's yours and usually I've just done it so that it's
25 both ways.

1 MR. MURPHY: Yeah. Okay. No, we can. I
2 just -- I didn't know if we'd already done that.

3 MS. KIRKWOOD: State's Exhibit 161 is
4 mine and it will have to be at the end because I've
5 already numbered --

6 MR. MURPHY: Not a problem.

7 MS. KIRKWOOD: Okay. Thank you.

8 Q. (BY MS. KIRKWOOD) Okay. So what I've been
9 referring to as red dots were all of these little areas
10 here.

11 A. You see this looks like it's within the
12 tissue. These areas here.

13 Q. Uh-huh.

14 A. I'm not sure if that's a blood drop. I can't
15 tell you for sure. You might be able to wipe that off,
16 because it doesn't look like it's infiltrated into the
17 tissue itself. You see the difference?

18 Q. Yes. Is that something you commonly see?

19 A. You can when you're reflecting, because the
20 scalp is very vascular. So that is certainly --
21 probably artifact there because you can see the
22 difference. And I think probably just -- you know, you
23 can get that wiped off.

24 Q. Okay. I believe that you took a -- a
25 histology -- a slide -- or you did histology on one of

1 the subgaleal hemorrhages. And my question is, which
2 one was it?

3 A. Let's see. The -- the big guy. The --

4 Q. The abrasion?

5 A. Under the surface. Not the abrasion.

6 Q. No, no, but the subgaleal underlying the
7 abrasion?

8 A. Correct.

9 Q. Good. Okay. So that's one we have the slide
10 on. We don't have a slide on the top one. Is that
11 right?

12 A. I'd have to look. Sometimes I put more than
13 one piece of tissue in a cassette, so I may have
14 several. And I don't have the slides with me, so I
15 can't tell you for sure. I know I would have taken the
16 largest one, but I may have taken the others and I just
17 don't remember.

18 Q. Okay. Let's see. Do you agree that the fact
19 that she had a coagulopathy for some period would have
20 affected the amount of bleeding from -- from any impact
21 or contact?

22 A. It could.

23 Q. Okay. Then we move down to the -- to the
24 right side, a subdural hemorrhage consisting of liquid
25 blood of the right cerebral hemisphere. A few clots of

1 blood are noted. Do you agree that this is a small
2 subdural hemorrhage?

3 A. Well, any subdural hemorrhage is significant
4 in a child. So I don't know what you really mean by
5 that. If you see a subdural in a child it's
6 significant.

7 Q. And what does the subdural in a child mean?

8 A. Means there's injury to the brain itself.

9 Q. Now, I'm sure that you know that in the
10 studies by --

11 MR. BASKETT: Objection; that's not in
12 question form.

13 MS. KIRKWOOD: Okay.

14 Q. (BY MS. KIRKWOOD) Are you familiar with
15 studies by Rooney, Rooks and others between 2006 and
16 2008 looking for subdural hemorrhages in newborn
17 children?

18 A. No, I'm not familiar with that paper.

19 Q. Okay. Dr. Rooks found in taking MRIs in 2008,
20 2009, that approximately 46 percent of asymptomatic
21 newborns have subdural hemorrhages. Would that surprise
22 you?

23 A. Newborns can have subdural hemorrhages.

24 Q. Pardon?

25 A. They can have a subdural hemorrhage.

1 Q. Does that mean they have brain damage?

2 A. You've got -- you've got -- no, it does not
3 mean they have brain damage.

4 Q. Okay. And so subdural hemorrhages --

5 A. But --

6 Q. -- do not always equate with brain damage. Is
7 that right?

8 A. Correct. But in this case, you've got impact
9 points. In my opinion, you've got injury to the brain.

10 Q. Would it be correct to describe each of these
11 impact points as simply bleeding? We've already covered
12 the first ones. We don't know how old they are, how
13 significant. These other ones are subgaleal -- the
14 other impact points that you're describing are the
15 subgaleal hemorrhages. Is that right?

16 A. Right. That's the impact points.

17 Q. Okay.

18 A. That's the hemorrhaging tissue.

19 Q. Okay. Okay. So it's bleeding -- some are
20 bleeding under the skull -- under the skin and -- and
21 correct me if I'm wrong, but I -- I think we've agreed
22 that those may be affected by the coagulopathy.

23 A. They may be bigger, but if you notice, there's
24 not hemorrhage over the entire scalp there.

25 Q. So -- that's right. Yes. Would you expect

1 hemorrhage over the entire scalp in the case of a
2 coagulopathy?

3 A. I'd expect more hemorrhage, you know, more
4 diffuse than discrete impact points that correspond
5 there.

6 Q. Now, assuming --

7 A. You see impact points.

8 Q. Sorry. Assuming that all those little spots
9 are -- aren't blood that can be wiped -- are smaller
10 hemorrhages, would you consider them to be impact
11 points?

12 A. Those -- they sure look like -- you know,
13 pulling the scalp back to me, they don't look -- they
14 don't look like the impact point. They look different.
15 See how it's infiltrated in that tissue? So I just
16 think that's artifact.

17 Q. Okay. Okay. How many impact points are there
18 on -- on this?

19 A. I have not counted every place you see a, you
20 know, discrete area. It could be an impact point. You
21 could have, you know, an object that kind of has, you
22 know, different surfaces which might be one impact
23 point. So I can't give you an exact number, but you can
24 see they're in different locations on the scalp.

25 Q. Could you point to the areas that you think

1 are impact points?

2 A. (Complies.) And then this in here. I have to
3 kind of get back.

4 Q. And do these correspond to any bruises or
5 contusions or -- on -- that are externally visible?

6 A. I don't believe we shaved the head on that,
7 and sometimes you can have subscalpular hemorrhage
8 without having an external bruise.

9 Q. Yes. And can you sometimes have a
10 subscalpular hemorrhage from a coagulopathy?

11 A. Not like this. These are impact points.

12 Q. Okay.

13 A. They're discrete. They're discrete.

14 Q. Now -- now, when you say discrete, it looks as
15 if some of them are round and so on. Why do you
16 think -- what makes them impact points rather than
17 simply bleeding to you?

18 A. Well, if you -- look at the whole body. Let's
19 look at that. You're concentrating right here --

20 Q. I'm just -- --

21 A. -- where there's blunt force injury. But
22 let's look at the rest of the body. There aren't a
23 bunch of petechiae and purpura and bleeding sites all
24 over the body. And if you've got a coagulopathy, you
25 would expect to see these sites all over, and you don't

1 have that. But we do know that there's blunt force
2 injury to this head.

3 Q. Are you -- well, we know that there's bleeding
4 to the head. I think we can all agree on that. And
5 there's also bleeding --

6 MR. BASKETT: There's no question there.

7 MS. KIRKWOOD: Okay.

8 Q. (BY MS. KIRKWOOD) Is there also bleeding to
9 the lungs -- from the lungs through the ETT tube?

10 A. I can't say that. I didn't see the ETT tube
11 and it may be pulmonary edema.

12 Q. Okay. Apart from that -- okay. These are the
13 nursing notes, and I'm going to read them to you, but I
14 can give you a copy if you'd like.

15 A. You can read them.

16 Q. Okay. Thanks. Okay. This is 1239 on the day
17 of admission, that's about an hour after hospital
18 admission, suctioning bright red, fresh blood from ETT,
19 and then we have at the same time, 1240, fresh bleeding
20 noted from vaginal and rectal area. Then we go down to
21 1345, frank red blood from ETT, 1349 red frothy blood
22 from ETT, 1429 large amount, fresh red frothy blood from
23 ETT. It goes on like that. It's still going on at 5:00
24 in the evening. And would you agree that if the nursing
25 notes are correct, that they were suctioning red blood

1 from the ETT during that period?

2 A. It might be congestion and pulmonary edema,
3 especially when they're saying frothy.

4 Q. Okay. But --

5 A. You see frothy foam caps with -- you know,
6 since they're saying frothy, I think that's more
7 pulmonary edema.

8 Q. It changes to frothy. Originally it's fresh
9 blood -- bright red blood. And then -- do you know how
10 they treated the coagulopathy at the hospital?

11 A. No.

12 Q. Okay. Do you know what the standard procedure
13 for -- for treating a coagulopathy is?

14 A. No.

15 Q. Okay. It's -- well, it's fresh frozen plasma.
16 It's -- it's injecting the -- the -- the missing -- the
17 missing substances, I'll say for lack of a better word,
18 needed for coagulation. So she's been receiving, over
19 this period, infusions every hour or two of fresh frozen
20 plasma and packed red blood cells and things of that
21 nature. So it's changing from the blood to the frothy.

22 THE COURT: Somewhere there is a
23 question, I think.

24 MS. KIRKWOOD: Yeah. There's got to be a
25 question there. I'm sorry. I apologize.

1 THE COURT: Let me --

2 MS. KIRKWOOD: I'm sorry.

3 THE COURT: Do you recognize --

4 MS. KIRKWOOD: Yes.

5 THE COURT: -- frozen plasma as a means
6 to treat coagulopathy?

7 MS. KIRKWOOD: Yes.

8 A. That is outside my area of expertise.

9 MS. KIRKWOOD: Okay.

10 A. I have not been in the treatment of that.

11 THE COURT: Move on, please.

12 MS. KIRKWOOD: Okay.

13 Q. (BY MS. KIRKWOOD) So is it consistent with a
14 coagulopathy, in your view?

15 A. What are you --

16 Q. I'm sorry. Is the -- is the red blood coming
17 from the ETT tube and provision of fresh frozen plasma,
18 things like that, consistent with a coagulopathy and the
19 treatment of a coagulopathy?

20 A. Maybe yes, maybe no. Maybe they're just rough
21 at putting an endotracheal tube in and you've got some
22 blood. I don't know.

23 Q. Okay. Would this have been --

24 A. Of course, we really don't have any signs of
25 that in the microscopic. I didn't see anything that

1 looked -- or grossly, so -- but it still could be edema
2 fluid. And I'm not going to say one way or the other,
3 because I didn't see it.

4 Q. Okay. And -- and do you know whether they
5 were giving fresh -- they would give fresh frozen plasma
6 for edema?

7 A. You usually don't give -- for pulmonary edema
8 you wouldn't -- I think you would give something else,
9 but again, ask a clinician.

10 Q. Okay. The -- would you be surprised to find
11 that the hospital doctor diagnosed this as DIC or
12 disseminated intravascular coagulation?

13 A. Well, I didn't see any signs of it at autopsy.

14 Q. Would it have been corrected by the
15 transfusions over the hours after arrival in the PICU?

16 A. That's outside of my area.

17 Q. Okay. Would this have -- would this
18 information have been helpful for you to know in
19 reaching your conclusions in the autopsy?

20 A. No. This is a clear case of blunt force
21 injuries of the head.

22 Q. Based on bleeding. Is that correct?

23 A. No. Based on impact points. You've got an
24 abrasion, an impact point, and contusions. By
25 definition, that is blunt force injury. You look at the

1 head. You look at the vagina that is torn. That has
2 nothing to do with a coagulopathy. A torn vagina is
3 blunt force injury.

4 Q. Okay. So we have the torn -- the two areas
5 that are not solely bleeding in your view are the area
6 of abrasion and the -- and the torn vagina. Is that
7 correct?

8 A. Would you repeat that?

9 Q. I'm sorry.

10 A. I didn't quite understand what you're saying.

11 Q. Most of the areas that we've talked about are
12 areas of bleeding, I think, and the two that I think
13 you've identified as -- as having something beyond
14 simply bleeding are the abrasion on the back of the head
15 and the tear in the vaginal area. Are there any others?

16 A. I think I've explained that every one of those
17 areas that looks like it's in the tissue is blunt
18 injury -- blunt force injury. The abrasion, it
19 indicates an impact point. It's full thickness. It's
20 blunt force trauma. And then the vagina that is torn
21 and there's contusion all around it, that is blunt force
22 injury.

23 Q. Okay. But medically --

24 A. And you look at the back of the body. You
25 look at the other areas. There's no hemorrhage there.

1 But the area where the blunt trauma is is where you see
2 this bleeding.

3 Q. I just want to be sure in using the term blunt
4 force trauma, if blunt force trauma -- other than the
5 abrasion and the vaginal area, if that's synonymous with
6 hemorrhage. If there's anything else about this skin
7 that's -- that's different or if we're talking about
8 hemorrhage as being the medical evidence of blunt force
9 trauma.

10 A. Looks like impact points to me. It's not just
11 willy nilly bleeding all over the body with purpura and,
12 you know, petechiae and you look like you got a horrible
13 rash, so I -- I think this is blunt force injury.

14 Q. But it's because of the bleeding. Is that
15 right? It's bleeding we're talking about, nothing else?

16 A. A contusion. Blunt -- blunt force injury
17 consists of an abrasion, which is a scraping of the
18 skin, or a contusion, which is a bruise, or a
19 laceration, which is a tearing of the skin or fractures.
20 Those are the four things you see with blunt force
21 injury. And that's all I'm saying.

22 Q. Okay. In this area here, is it correct that
23 we're just talking about bleeding?

24 A. It's a contusion.

25 Q. And a contusion is bleeding within the skin?

1 A. Yes, within the soft tissue of your skin.

2 Q. Okay. Blunt force injuries of the trunk, you
3 have a three-quarter inch area of purple contusion on
4 the left lateral chest. Was that significant to you?

5 A. It's a small bruise.

6 Q. Would that likely have been life-threatening
7 in any way?

8 A. No.

9 Q. Do you know how old it was?

10 A. It's fairly recent. I can't date it.

11 Q. Within a few days?

12 A. Fairly recent. Could be within hours to a day
13 or two.

14 Q. Okay. So would that be correct it could have
15 occurred in the hospital or back to -- when you say day
16 or two, do you mean -- I know there are so many deaths,
17 the -- so we almost have to use a date. She was --
18 collapsed, admitted on the 28th, organ harvest on the
19 30th, and that -- so when you say within a day or two,
20 within a day or two of the 30th?

21 A. The incident -- of the incident, you know.

22 Q. Within a day or two of the 28th?

23 A. Yes.

24 Q. Okay. Okay. Would that be true for most of
25 these contusions, that -- that you think they would have

1 been within a day or two of the 28th?

2 A. Well, some could be at the hospital, too,
3 because you can get a few contusions in the hospital.

4 Q. Okay. So we're covering a range of -- of a
5 day or two before hospitalization up to the end of the
6 organ harvest, basically?

7 A. Yes.

8 Q. Okay. Here's the real question to which I --
9 I don't know the answer. They say you aren't supposed
10 to ask them, but if a child is -- is -- the organs have
11 been harvested, they're on the way to the autopsy, and
12 they're in a collision, can they bleed at that point or
13 has bleeding stopped at that point? Can you bleed after
14 the final death, I'll call it? Can a body bleed after
15 the final death?

16 And I'm not trying to trick you on that
17 one in that -- it's simply that, as I think you know,
18 the child's body was in a 23-car collision on the way to
19 the autopsy. You postponed it a day for that reason and
20 I'm asking, is it possible to bleed -- it may not be at
21 all. I'm asking a true question.

22 A. No. You know, the heart's not beating.

23 Q. Okay.

24 A. You know, if they've got some loose blood in
25 the chest -- or the abdominal cavity because they took

1 an organ, yeah, you can -- just from the -- there's
2 blood in there, so it might look like it's bleeding, but
3 you've just got residual blood.

4 Q. Okay. As far as the microscopics on the areas
5 that we've discussed, I think you said that you took a
6 slide or two from the area of the abrasion?

7 A. The subscalpular.

8 Q. From the subscalpular. Yes. Yes. Did you
9 take any other slides of the areas that we have
10 addressed?

11 A. No.

12 Q. No. Okay. And I think I -- I was going to
13 include in that the -- the -- again, the small
14 contusions on the back, three-eighths inch blue
15 contusion, brown contusion of the left lateral lower
16 leg, they all seem to be about one-eighth of an inch to
17 three-eighths of an inch. Is that -- is that true for
18 all of those? There's no --

19 A. I believe so.

20 Q. Okay. And are those all relatively minor, in
21 your view?

22 A. Yes.

23 Q. Do you have any idea what caused them other
24 than blunt force trauma?

25 A. Blunt force trauma.

1 Q. Okay. And again, would that be the same
2 timing range; anytime from a few hours before organ
3 harvest back to a couple days before the 28th?

4 A. Yes.

5 Q. Okay. You indicated that the other features
6 of this child are within the usual limits of size,
7 character and position for age, sex and development. I
8 think that Dr. Wilson has said that she was a
9 6-month-old with the body size of a 3-month-old with
10 some failure to thrive, grossly developmental possible
11 issues. Do you agree with that?

12 A. I'd have to look at the chart. Her organs,
13 you know, looked okay, but I didn't compare them to a
14 growth chart.

15 Q. Okay. The examination of the brain following
16 the formalin fixation, was that your examination of the
17 brain or Dr. White's?

18 A. Dr. White.

19 Q. Okay. And that was a -- he showed a thin
20 right subdural hemorrhage. That's consistent with
21 your -- with your gross findings. Is that right?

22 A. Yes.

23 Q. Okay. Did you -- do you know what might have
24 caused that right subdural hemorrhage?

25 A. Blunt force trauma.

1 Q. Do you know what vehicle that may have been
2 from?

3 A. Blunt force injury.

4 Q. No, apart from that. I -- I meant more
5 physiologically from a ruptured bridging vein or from
6 a -- or was it an intradural or --

7 A. From ruptured bridging vein.

8 Q. And did you observe the ruptured bridging vein
9 at autopsy?

10 A. No, you don't see them.

11 Q. I think there are some photographs which have
12 shown bridging veins. Did you see -- did you look for a
13 burst bridging vein?

14 A. You usually can't see it.

15 Q. Okay. So is that hypothesis, then, that it
16 was from a burst bridging vein?

17 A. It's accepted that's where subdurals come
18 from.

19 Q. There's actually been quite a -- a bit of new
20 work. There is a question. Are you familiar with the
21 new work on intradural hemorrhages that might --

22 A. Vaguely, but this is a subdural hemorrhage and
23 I -- I stand by what I say. It's blunt force injury.

24 Q. Okay. And could the size -- it's a thin one
25 anyways. Is that correct?

1 A. Well, you've got that and you've got a clot,
2 too, you saw in that one photo.

3 Q. But that's in the ventricle.

4 A. If you look -- if you look on that photo --

5 Q. Okay. All right. Well, just -- take just the
6 subdural to begin with. Would that size subdural
7 necessarily affect a child's behavior?

8 A. I think it's indicative of blunt force injury
9 to the head, and I don't believe the child would be
10 acting normally. I think they would be unresponsive.

11 Q. Okay. Did you look at the -- did you look at
12 the CAT scan that was taken at Northwest Texas Hospital?

13 A. No.

14 Q. Okay. That indicated -- I believe the report
15 indicated a thin subarachnoid hemorrhage. If that
16 report is correct, would that indicate that the subdural
17 arose after hospitalization?

18 A. No. And I've found -- in our experience, a
19 lot of times the MRIs and CAT scans aren't correct.
20 We'll do an autopsy and they may say there's a subdural
21 and we don't find one, vice versa.

22 Q. Okay. Is it possible that this -- that this
23 subdural hemorrhage was related to the coagulopathy?

24 A. In my opinion, it's due to the blunt force
25 trauma.

1 Q. Yes, but is it possible? Just yes or no. Is
2 it possible --

3 A. No.

4 Q. It is not possible?

5 A. It is not -- in my opinion, no. It's due to
6 blunt trauma.

7 Q. Okay. Is it possible that the size of the
8 subdural hemorrhage increased during hospitalization?

9 A. That could be possible.

10 Q. Okay. So that the subdural that you saw --
11 the thin subdural that you saw at autopsy might have
12 been considerably smaller when the child arrived in the
13 hospital. Is that right?

14 A. It's possible.

15 Q. Okay. What's the differential diagnosis for
16 subdural hemorrhages?

17 A. In this case, what I see is blunt force
18 trauma.

19 Q. There's only one. There's no differential
20 diagnosis?

21 A. There are other subdural -- but if I look at
22 the entire picture here with the impact, I've ruled out
23 other things, it's blunt force injury.

24 Q. Okay. But what is the differential diagnosis
25 for subdural hemorrhages?

1 A. There's a lot of them. You know, you could
2 have, you know, a stroke and it breaks into the, you
3 know, subdural space, but I have to look at this case.

4 Q. Okay.

5 A. There's no stroke here.

6 Q. How about a coagulopathy? Is that one of the
7 alternative diagnoses, the differential diagnosis?

8 A. But you're not going to see the blunt force
9 injury.

10 Q. No, I'm not talking --

11 A. I -- well, with a coagulopathy you do not --
12 you have a coagulopathy. I've got evidence here of
13 blunt force trauma on this scalp. So that's my
14 differential.

15 Q. The impact evidence that you've indicated of
16 blunt -- the medical evidence of blunt force trauma
17 consists entirely of hemorrhage, other than the abrasion
18 and the tear in the vagina. Is that right?

19 A. It's contusion, yeah. And the abrasion is a
20 blunt force -- by definition, blunt force, and a torn,
21 ripped vagina is blunt force. It's not due to a
22 coagulopathy.

23 Q. Let's move to the vaginal area. The
24 photographs that we have seen of the vaginal area are
25 external photographs. Did you -- did you photograph the

1 laceration itself?

2 A. Yeah, you can see it from the photo. Not that
3 one, of course, but we have photos.

4 Q. Okay. Well, perhaps -- well, I saw bleeding.
5 Is a bleeding --

6 A. The bleeding is the contusion.

7 Q. Pardon?

8 A. The bleeding is bleeding. The tear is a tear.

9 Q. Okay. And where is the tear?

10 A. It's farther back than where the contusion is.

11 MS. KIRKWOOD: Okay. Why don't we do
12 these two.

13 A. We have a better picture than that.

14 Q. (BY MS. KIRKWOOD) Okay. I gave a couple.
15 Well, first of all, leave that one up and see if the
16 tear is visible in that one.

17 A. It's not open enough. You can still see kind
18 of the darker areas. That's contusion.

19 Q. Now, would you agree that the labia majora are
20 undamaged?

21 A. Yes.

22 Q. Okay. And would you agree that there's no
23 bruising around the inner thighs?

24 A. Let me see if I -- I had just a very --
25 essentially, yes, because I had like a one-eighth inch

1 blue contusion, very small. So really there's not a lot
2 of bruising around the thighs.

3 Q. Okay.

4 A. I agree.

5 Q. And would you agree that the labia minora are
6 not damaged from what you can see there?

7 A. Correct.

8 Q. Okay. So we're talking about some bleeding in
9 the vestibule? Can I use that term? I -- for some
10 reason I can't say --

11 A. Yeah, it's just in the vagina.

12 Q. Well --

13 A. Let's just say in the vagina. You know, the
14 outside and it goes deeper in.

15 Q. Okay. Well, let's call it the vestibule,
16 because the vagina is behind the hymen, and I believe
17 that this child's hymen was intact. Is that correct?

18 A. I don't remember. I just know it's towards
19 the end. I think it was, but --

20 Q. So probably the vestibule on this side of the
21 hymen?

22 A. Yeah.

23 Q. Okay. So that's the area just right inside.
24 When you open the crease that's the vestibule?

25 A. Right. Right.

1 Q. Okay. So that's the area in which we have
2 blood, basically?

3 A. Blood and a tear.

4 Q. Okay. And did you see the tear?

5 A. Yes.

6 Q. And where did the tear go?

7 A. Well, I've got a picture of it if we show the
8 correct photo.

9 Q. Okay.

10 MS. KIRKWOOD: Keep trying, Ruth. Thank
11 you.

12 Oh, thank you. Thank you, Ruth. That
13 was Exhibit 178 that we were discussing. It didn't show
14 the tear. It did show the -- that there was no bruising
15 around the thighs and so on.

16 Q. (BY MS. KIRKWOOD) Is this a better picture
17 for you?

18 A. Yes.

19 Q. Okay. And that's State's Exhibit Number -- do
20 we know the number?

21 A. There's the tear, there's your contusion.

22 Q. 179. Okay. And now we're all coming up.
23 Okay?

24 A. That is a tear right there. There is the
25 contusion --

1 Q. Okay.

2 A. -- in the soft tissue.

3 Q. Okay. Let me get this right. So stay down
4 here, because I'd like you to actually describe it,
5 because when we read the trial record we couldn't
6 understand anything.

7 A. It's a laceration. It's a tear.

8 Q. Okay. So it's a laceration going up and down
9 vertically as it shows in the picture? Up and down
10 vertically, kind of around --

11 A. Yeah. Right in here.

12 Q. Kind of around the middle?

13 A. Uh-huh. And then this is the contusion.

14 Q. And then there's a swoopy U-shaped area at the
15 bottom --

16 A. Right.

17 Q. -- that is being described as a contusion.

18 Okay. Now, once you find evidence of
19 sexual assault or what you believe to be evidence of
20 sexual assault, what is the standard autopsy protocol
21 for examination?

22 A. We did a sexual assault --

23 Q. Pardon?

24 A. We did a sexual assault exam -- or took swabs
25 looking for, you know, sperm.

1 Q. And did you find anything?

2 A. No.

3 Q. They were negative? Okay. I'm going to read
4 to you -- this was described by a previous witness and I
5 have a description here. I don't know if you know this
6 book. This is Child Abuse, Medical Diagnosis and
7 Management. The editors are Robert Reece, Stephen
8 Ludwig and everybody in the world has contributed, Carol
9 Jenny, Kent Hymel -- are those names all familiar?

10 A. I've heard of some.

11 Q. Okay. This is in the chapter on child abuse.
12 And this is on the sexual -- in the sexual assault
13 section, and I don't know who wrote it. I'm not sure
14 it's relevant, but I can get it for you. It said
15 that -- and it said if evidence of trauma is found,
16 special dissection is necessary. In the male -- I'm
17 going to skip the male. In the female, the dissection
18 also -- well, maybe not, because it has some -- in the
19 male, the rectum, anus and perianal tissues are excised
20 en bloc. In the female, the dissection also includes
21 the perineum, uterus, vagina and vulva. The bladder --
22 the bladder and urethra are usually incorporated within
23 this block. After removal, the anus and vagina are
24 opened and the injuries are photographed. The tissues
25 are then fixed in formalin and subsequently sectioned

1 for microscopic -- for microscopic examination. When
2 these dissections are done properly the remaining pelvic
3 tissues can be sewn shut so as to leave no evidence of
4 the -- my heavens, big word -- ex -- well, let's call it
5 an excision. Okay. It's a longer word than that.

6 So did you do that?

7 A. No, I did not.

8 Q. Okay. And why did you not do that?

9 A. Back then we weren't doing that.

10 Q. Are you doing it now?

11 A. We don't get many sexual assaults, but it
12 would be something to look into.

13 Q. Yes. How many slides did you take of the
14 vaginal area?

15 A. I think just one.

16 Q. Okay. And I think you know -- that one -- do
17 you know what area you took that from? I know it's --
18 yes.

19 A. Well, it's, you know, the area where the
20 injury was.

21 Q. Do you know if you took it from the area of
22 the tear that you saw or some other area?

23 A. I don't remember.

24 Q. Okay. If this had been an ongoing process,
25 would one slide have been sufficient to give us the --

1 the time line to show whether there was anything old,
2 anything new, et cetera?

3 A. Well, you've got a representative section and,
4 you know, it's not very large down there.

5 Q. Is it possible that if you took a section that
6 was of fresher bleeding, say bleeding occurring after
7 hospitalization, that this would be -- that this could
8 miss an older injury?

9 A. I'm not quite sure what you're asking.

10 Q. Oh. I suppose I'm asking -- sometimes with --
11 we'll say just a regular bruise, if you're determining
12 the age, it's important to take it from several areas
13 because it heals at different rates. So -- and you're
14 looking for the oldest part of the bruise. In other
15 words, it can expand over a time period. So if you're
16 looking for the oldest for when something started, you
17 may need to take a number of samples. Is that -- is
18 that a fair description?

19 A. Well, grossly it all looks the same.

20 Q. Okay. And grossly -- how would you time this
21 grossly?

22 A. Recent.

23 Q. Pardon?

24 A. Recent.

25 Q. Recent? And is that the same as within a

1 couple days of admission to the hospital?

2 A. Yes.

3 Q. Okay.

4 MS. KIRKWOOD: Oh, you found it. Thank
5 you.

6 Q. (BY MS. KIRKWOOD) The article that you --
7 that you gave me -- and I haven't been aware of -- I was
8 aware of the Coagulopathy in Pediatric Abusive Head
9 Trauma. This is a Hymel article in Pediatrics, March
10 1997. And it looked at the -- the PTTs in children
11 who -- who were believed to have been the subject of
12 abusive head trauma. And it showed the PTT range in the
13 5th to 96th percentile as 23 to 36. So mildly -- is it
14 fair to say that's mildly elevated, but nothing like
15 over 212?

16 A. Well, the number is up, but again, I -- I
17 don't want to make any comment on what the number means.

18 Q. Okay. Do you know how long it takes to get a
19 coagulopathy of over 212?

20 A. No.

21 Q. Yes. Could you get that within an hour?

22 A. I have no idea.

23 Q. The -- the children in this test -- the
24 coagulation tests were taken within two days of
25 presentation, so that's actually a -- and in a few times

1 even longer than that. Would you expect those
2 coagulations to be on the high side?

3 A. Like I said, I'm not discussing coagulations.

4 Q. Okay. That's fair. What are some of the
5 things that can cause a coagulopathy? Or is that
6 completely out of your area?

7 A. I -- that's out of my area.

8 Q. Okay. Did you test for any -- I'm going to
9 just suggest to you that some of the things might be
10 vitamin deficiency, Vitamin K deficiency, Vitamin C
11 deficiency, bleeding Von Willebrand's, things like that
12 can all cause -- well, let's move away from the area of
13 just subdural hemorrhage and into the area of what can
14 cause unusual bleeding. Can you give me a differential
15 for that?

16 A. Not right off the top of my head, no.

17 Q. Okay. I'm going to -- I can't do it off the
18 top of my head either, but I have here a book, Abusive
19 Head Trauma in Infants and Children, a Medical, Legal
20 and Forensic Reference by Lori Frasier, et al. Do you
21 know Dr. Frasier?

22 A. No.

23 Q. Okay. Dr. Sirotnak?

24 A. No.

25 Q. Okay. They have a chapter in this book, which

1 is a 2006 textbook, that has -- it's called Medical
2 Disorders that Mimic Abusive Head Trauma. And it's an
3 entire chapter so I'm not going to read it to you,
4 although it's quite a useful book. I would recommend it
5 actually.

6 They -- they have a few of the things --
7 they have them grouped by category as prenatal,
8 perinatal and pregnancy related conditions causing
9 intracranial hemorrhage. Is that still possible at the
10 six-month period?

11 A. What -- what is your question? You're reading
12 it to me.

13 Q. Okay. I'm sorry. Speaking too fast.
14 Prenatal, perinatal and pregnancy related conditions and
15 also birth trauma, things of that nature, that's for
16 intracranial hemorrhage and that -- which would be all
17 the hemorrhages we saw in the head. Do you think that
18 six months is too old to have conditions that might
19 cause bleeding?

20 A. I still don't understand where you're
21 coming -- I know the child had been seen by its
22 pediatrician. They described the child as normal.

23 Q. And I think you -- you may recall that they
24 also found some growth problems and nutrition problems
25 that were being worked on at the time. Do you recall

1 that?

2 A. No.

3 Q. Okay. Do you recall in the earlier pediatric
4 reports the pediatrician expressing concern that the
5 3-year-old was climbing into the baby's crib and walking
6 around the house with her?

7 A. No.

8 Q. No? Would that -- would that strike you as a
9 wise thing? To have --

10 A. The child is walking where?

11 Q. The 3-year-old is climbing into the baby's
12 crib with the rails up, taking the baby out, and walking
13 around the house with her. This was reported by the
14 mother, and the pediatrician said, you simply cannot
15 allow that to happen.

16 A. I have no comment. I don't know if that's
17 true or not.

18 Q. Okay. And that's in the pediatric records.
19 Would that cause concern -- safety concerns to you as a
20 doctor, if not as a pathologist?

21 A. If they're playing -- you know, I just don't
22 have -- I don't know what they're doing actually. You
23 know, if they're in the house, you can have a 3-year-old
24 and a baby. I don't know if -- I don't know how to
25 answer that.

1 Q. Okay. There are various congenital
2 malformations. I take it that -- did you -- did you
3 check to see if she had any congenital malformations?

4 A. She didn't have any.

5 Q. Okay. And how did you check for that?

6 A. You look at the organs.

7 Q. And particularly in the area of the brain,
8 did -- did you look at all of the -- the veins and
9 arteries and so on?

10 A. Absolutely. It was a thorough examination by
11 the Department of Neuropathology at UT Southwestern.

12 Q. I see. So -- so that part was -- wasn't your
13 part. So that part was Dr. White's part?

14 A. Yes.

15 Q. Is that correct? Okay.

16 Okay. Medical conditions and disorders.
17 Oh, my heavens. There's a long list of them. I'm not
18 going to go through all of them, but let's do genetic
19 and metabolic conditions that can cause intracranial
20 hemorrhage. Sickle cell anemia, Marfan's syndrome --
21 there's a lot of syndromes. Did you check for any of
22 these?

23 A. Well, I didn't see any sickling on, you know,
24 these slides. And Marfan's, you know, they're huge.
25 You know, they're like Abraham Lincoln, you know.

1 Q. Lincoln. Okay. So those ones we can exclude.
2 How about glutaric aciduria type one?

3 A. I don't think we were running metabolic tests
4 back then, but the bottom line is, you've got blunt
5 force injury, period.

6 Q. I realize that, but we're talking about
7 hemorrhage and I'm looking at the alternative diagnosis
8 for bleeding or hemorrhage, and I want to make sure that
9 those have been ruled out. I think you said in your
10 autopsy report that -- that the alternative causations
11 had been ruled out at autopsy.

12 A. Yes. I think they are ruled out, because I've
13 got blunt force injuries.

14 Q. Okay. But -- but I'm still talking about
15 ruling out the other ones. If we're talking about
16 bleeding, I'm still talking about --

17 THE COURT: Next question.

18 Q. (BY MS. KIRKWOOD) -- ruling out the others.

19 THE COURT: Next question.

20 MS. KIRKWOOD: Okay.

21 THE COURT: We're not going to be
22 argumentative.

23 Q. (BY MS. KIRKWOOD) Did you check for any
24 Vitamin K deficiencies, vitamin deficiencies, factor
25 deficiencies, Von Willebrand's disease, things like

1 that, were those checked for either at the hospital or
2 by you?

3 A. They weren't checked by me, but the
4 pediatrician, again, says the child doesn't have any
5 conditions such as that.

6 Q. Did the pediatrician check for anything -- for
7 anything --

8 A. I don't know, but they're doing their well
9 baby checks.

10 Q. Are those checked for in well baby checks?

11 A. They may be.

12 Q. All right.

13 A. You'll have to ask her, but, you know, they're
14 saying it's a normal child, so there must have not been
15 any symptoms.

16 Q. Okay. So to your knowledge, did anyone check
17 for these -- if -- if Dr. Werner --

18 A. I know we didn't.

19 Q. Pardon?

20 A. We didn't. I don't know what they may have
21 done.

22 Q. Okay. And you didn't get any reports with the
23 results of that type of testing?

24 A. No.

25 Q. Okay. The -- they have a big chapter on

1 hematological diseases and disorders of coagulation and
2 clotting. And I think you agreed that some of these
3 disorders of coagulation and clotting, whatever they
4 might be, might -- might -- might definitely expand
5 bleeding. Is that correct?

6 A. It could.

7 Q. And do you believe that it could also cause
8 bleeding?

9 A. In this case, no.

10 Q. No, not in this case, but in general?

11 A. I'm speaking on this case.

12 Q. Okay. But -- but my question is, in general,
13 would a clotting -- can a clotting disorder cause
14 bleeding?

15 A. Yes.

16 Q. And can it cause bleeding in any body part or
17 organ?

18 A. It can.

19 Q. Infectious diseases. Do you know any
20 infectious diseases that are associated with
21 intracranial hemorrhage that would include all of the
22 hemorrhages to the head in this case?

23 A. Well, you've got the list.

24 Q. Okay. Strep -- strep pneumonia, bacterial
25 meningitis, herpes, and encephalitis, sometimes even

1 chronic otitis media, which is pretty serious, chronic
2 sinusitis, acute tonsillitis, and then we go into a lot
3 that are not as common. Would you agree that those
4 infectious diseases are sometimes associated with
5 intracranial hemorrhage?

6 A. Well, that's what it's saying, but this child
7 didn't have that. This child had blunt trauma.

8 Q. Okay. But -- but you would agree that these
9 infectious diseases could also cause intracranial
10 bleeding?

11 A. It's possible.

12 Q. And was this child checked to see if she had
13 any of these disorders?

14 A. Yes. You know, at autopsy, the meningitis --
15 you know, we take sections. There wasn't any
16 meningitis. We routinely look at the ears. We take the
17 inner ears out. There was no pus or anything there. I
18 can't remember all the rest of them you were saying.

19 MS. KIRKWOOD: I see. Yes. I think she
20 said she did.

21 Q. (BY MS. KIRKWOOD) Did you look at the inner
22 ears?

23 A. We check it. We look -- we go at the petrous
24 ridge and we saw that out and look for any sort of
25 infection there.

1 Q. And would you necessarily see the infection?

2 A. Well, that's the reason we do it. I didn't
3 see anything there.

4 Q. Did you do -- did you do any swabs for
5 infection?

6 A. No.

7 Q. Okay. Toxins, I think. Nutritional
8 deficiencies. Are you aware of the -- of the
9 association between certain nutritional deficiencies,
10 particularly Vitamin K deficiency, I think maybe Vitamin
11 C also in intracranial bleeding?

12 A. Well, I -- if it's on that list.

13 Q. And it might well cause it. Is that right?

14 A. It's possible, but again, this case, my
15 opinion, it's blunt force injuries.

16 Q. Okay. I just want to make sure that we go
17 through -- I think -- I certainly haven't named them
18 all, but we've gone through a number of differential
19 diagnoses. And is it -- is it fair to say that you
20 didn't do any specific testing for those differential
21 diagnoses in this case?

22 A. That's correct, because I didn't need to.
23 We've got blunt force injuries.

24 Q. Okay. You indicated in one of your reports
25 that you found blunt force trauma to the head, and I

1 think we've identified each of the areas on the head,
2 the abrasion and subgaleal -- the subgaleal on the top,
3 a thin subdural or possible subarachnoid --

4 A. Right.

5 Q. -- and that -- and I think that's it. Right?
6 I mean, apart from the small marks?

7 A. Yeah. Well, you saw the picture.

8 Q. Okay.

9 A. Whatever we've talked about.

10 Q. Okay. And you said the child will develop
11 symptoms very rapidly after these severe head injuries.
12 Which are the ones that you were referring to?

13 A. You can't just, you know, pick them out, but
14 whenever the -- you know, the one that caused the
15 subdural, that's when they're acting -- you know,
16 they're not going to be acting correctly. So more than
17 likely, it's the larger areas. It's not going to be
18 those little small ones. But that one abrasion, I think
19 that's certainly one that we could look at.

20 Q. The abrasion at the back of the head?

21 A. Yes.

22 Q. Okay. And you indicate throughout your report
23 that the child was acting normally when left with
24 Mr. Lopez. Is that right?

25 A. That is the information I had.

1 Q. Okay. There's quite a bit of information, and
2 unfortunately I did not bring -- well, maybe I do have
3 some.

4 It's not flagged. So it would take me
5 longer. I'm not going to -- the description -- this is
6 by DeAnn Lopez, Mr. Lopez' wife, and she said that when
7 Veronica, that's Dr. Vas, brought the children to her
8 about 4:30 on Wednesday, August -- October 25th, Isis
9 had ugly red marks, maybe 10 to 14 all over her forehead
10 and face and into her hairline. The marks on the
11 forehead were raised, dark colored and symmetrical.
12 First she said fleas, and -- and the mother first said
13 fleas and then said spider bites. You believe that
14 diagnosis was incorrect. Right?

15 A. Yes.

16 Q. Okay. Any idea what they might have been?

17 A. There's nothing there.

18 Q. The marks on the head?

19 A. I didn't see anything on the head.

20 Q. Well, these are -- they -- they seem to be in
21 the same places as what you described as contusions.

22 A. A contusion is different from a bite.

23 Q. Okay. But -- but these seem to be in the same
24 area. In that --

25 THE COURT: Is there a question?

1 A. Well --

2 MS. KIRKWOOD: Yeah. Yeah. I'm trying
3 to formulate one.

4 Q. (BY MS. KIRKWOOD) Are you -- are you thinking
5 that these -- do you think she did the description wrong
6 or -- or do you think these -- or do you think these
7 bumps evolved into contusions or do you have any idea of
8 what happened?

9 A. What I see are contusions. A spider bite is
10 not going to evolve into a bruise. I don't know what
11 she's looking at.

12 Q. Okay. And then we have reports of black stool
13 for -- from Wednesday night through -- through Friday or
14 Saturday. There may be some disputes on that, but there
15 are reports of black stool. What causes black stool?

16 A. Well, if you're giving someone iron or if
17 you've got upper GI bleeding.

18 Q. Okay. Did you -- did you look at the upper GI
19 tract or the lower GI tract?

20 A. Yes, I did.

21 Q. And did you see -- well, first of all, did you
22 culture the stool?

23 A. No.

24 Q. Was there any stool?

25 A. There was just a little bit in there, and it

1 was just -- I didn't comment on it, so it was probably
2 brown or green.

3 Q. Okay.

4 A. Because you can tell melanotic. It's kind of
5 black. It's sticky, so --

6 Q. Yes.

7 A. -- I would have commented on that.

8 Q. Okay. So you didn't see it at autopsy. Did
9 you have a report of the dark stool at the time of
10 autopsy?

11 A. I doubt it.

12 Q. Okay. Would that have caused you to look a
13 little closer and maybe take some slides if you'd had
14 that report?

15 A. No.

16 Q. No? Okay. I'm going to summarize here. It's
17 basically a description of the child not eating formula,
18 only taking small amounts of juice with Tylenol,
19 Ibuprofen or decongestant from Wednesday night to
20 Saturday morning, dark movements and so on. Does
21 that -- had dark stool, respiratory problems, almost
22 like a rattle, fever, and redness in the eyes. That's a
23 caretaker's description from Wednesday night to
24 Saturday. Do you see -- do you see anything abnormal or
25 that causes you concern in that description?

1 A. I don't know if the description is correct or
2 not.

3 Q. Okay. I'm going to ask you to assume that the
4 description is correct. What would that suggest to you?

5 A. That they've got red eyes?

6 Q. Well, black stool, it's dark stool,
7 respiratory problems, almost like a rattle, fever,
8 redness in the eye, she was lethargic and mostly slept.
9 She won't eat formula and she had only about 4 to 6
10 ounces of juice with Tylenol, Ibuprofen and/or a
11 decongestant from Wednesday night to Saturday morning.
12 She had quite a few bowel movements, two to four times a
13 day. The bowel movements were black -- were dark,
14 almost black. When I changed her diaper she cried hard,
15 more than ordinary crying, and stiffened.

16 A. Well, could be a viral infection, something
17 like that.

18 Q. Okay. Would that suggest that she wasn't
19 behaving normally during this period?

20 A. No, I -- when I'm saying not normal,
21 unresponsive. You've got a fatal head injury.

22 Q. Okay. And again, the fatal -- well, first of
23 all, did Dr. White find any traumatic injury to the
24 brain?

25 A. He found hypoxic injury, which you can get

1 from blunt trauma.

2 Q. That's right. And what else can you get it
3 from?

4 A. Well, not enough oxygen.

5 Q. Yes.

6 A. That's just a -- it's kind of a global thing.

7 Q. Yes. So you can get -- you can get it from --
8 if -- if I drop dead of a heart attack, then
9 resuscitated half an hour later, will I probably have
10 hypoxic ischemic damage to my brain?

11 A. Yes.

12 Q. Yes? Okay. Do you know what medications the
13 child was on at -- in the days before her death?

14 A. I think you just read something off --

15 Q. I think I did.

16 A. What, acetaminophen or -- I can't remember
17 what you just said.

18 Q. Okay. I think I -- well, I think it's -- an
19 antibiotic, Cephalexin, breathing treatments, albuterol,
20 a decongestant and Ibuprofen. She said Tylenol, but I
21 think she used it in that nonspecific sense. I think
22 that the medications that were provided were -- were the
23 ones that I've mentioned and -- and the specific
24 decongestant was PediaCare. Are you familiar with
25 PediaCare?

1 A. No.

2 Q. Okay. Are you familiar with pseudoephedrine
3 and dextromethorphan?

4 A. They're antihistamines, and that kind of cough
5 syrup, I believe.

6 Q. Okay. Are you aware that PediaCare and other
7 medications with pseudoephedrine and dextromethorphan
8 were taken off the market on the recommendation of the
9 Food and Drug Administration by the manufacturers in
10 October 2007 due to an association with sudden infant
11 death?

12 A. Seems like I vaguely remember something like
13 that.

14 Q. It was on all the television channels. I
15 don't have television, so -- sorry. Not a question.

16 Okay. Are you familiar in general with
17 the -- with the side effects of pseudoephedrine and
18 dextromethorphan?

19 A. No, I'd have to look them up.

20 Q. Okay. I'm going to ask you -- if it refreshes
21 your memory, fine; if it doesn't, fine. Restriction of
22 the blood vessels and tachycardia. Does that sound --

23 A. Well, it could do that.

24 Q. Okay. And if it did do that, could that cause
25 increased intracranial pressure, bleeding, things of

1 that nature?

2 A. It's not going to cause the blunt force injury
3 to the head I've got. It's not going to cause an
4 abrasion, it's not going to cause a lacerated vagina.

5 Q. Okay. But I'm just asking, could it cause
6 intracranial bleeding?

7 A. I don't know.

8 Q. Are dextromethorphan and pseudoephedrine, do
9 you know whether or not those are the ingredients used
10 in making meth?

11 A. They use something like that, because, you
12 know, they've got it now behind the pharmacy counter,
13 and I can't remember which one it is, but, yeah.

14 Q. Yes.

15 A. That's one of the ingredients.

16 Q. Yes. Yeah. Yeah. Maybe one or both.

17 Okay. Do you know whether it's
18 appropriate to give pseudoephedrine and dextromethorphan
19 to -- to infants -- well, it's now been removed for
20 under the age of two, but back in 2000 it hadn't been
21 removed yet. Do you know whether it was considered
22 appropriate by the American Academy of Pediatrics to
23 give it to this age group?

24 A. I don't know what in 2000 -- what they were
25 doing in 2000.

1 Q. Okay. Would those ingredients cause you some
2 concern in a very small, sick baby?

3 A. You'd have to ask a pediatrician.

4 Q. Okay. Do you know whether pseudoephedrine and
5 dextromethorphan were found in the toxicology reports at
6 SWIFS?

7 A. They weren't.

8 Q. Well, I think they were.

9 A. I have lidocaine.

10 Q. Pardon?

11 A. I have lidocaine.

12 Q. Where is it? I took it out --

13 A. Not at SWIFS.

14 MS. KIRKWOOD: No. Is it? No. All
15 right. Here we go for a hunt for these. Sorry. I
16 looked at them earlier --

17 THE COURT: Do you want your comments
18 you're making right now on the record?

19 MS. KIRKWOOD: Sorry. No. No. Please.

20 THE COURT: Then try not to -- just
21 whisper.

22 MS. KIRKWOOD: Whisper. Yes.

23 We can go back on the record. I found it.

24 Q. (BY MS. KIRKWOOD) Would you like for me to
25 just read them or would you like to look at --

1 A. Let me look.

2 Q. Is that all right?

3 A. I just have the one with the autopsy report.

4 I may not have something extra.

5 Q. You may not have this. It may have come in

6 later.

7 A. This -- I don't think this is -- this is not

8 what we get as reports.

9 Q. I received it from Mr. Baskett.

10 THE COURT: All right.

11 A. This isn't a SWIFS --

12 THE COURT: All right. Deal -- deal with

13 your client. Do you have any more questions of her?

14 MS. KIRKWOOD: Okay.

15 A. I don't know where this came from. It's not a

16 SWIFS' report.

17 Q. (BY MS. KIRKWOOD) As far as you know you

18 haven't seen this report before?

19 A. I haven't seen that, no.

20 Q. Okay. Might that have been important for you

21 to know?

22 A. Well, I'd need to -- you know, I don't even

23 see a level. I -- that just doesn't look like our

24 reports.

25 Q. I -- I --

1 A. That's the first time I've seen it.

2 Q. Okay. Let me -- I'm going to look in my
3 toxicology section here.

4 A. Just looking at my request -- let's see. I
5 said, other, please run hospital blood for drug screen,
6 parentheses, decongestant, close parentheses, blood
7 coming from crime lab. Do not use hospital blood for
8 alcohol. So it looks like I was trying to conserve, but
9 I don't see a report. So it's possible they may have
10 sent it out, but I just don't -- don't see it.

11 Q. Is this something you would have wanted to
12 see? You did ask them to test for these --

13 A. It looks like I asked them to test for it,
14 but --

15 Q. You did.

16 A. But I didn't -- because that looks like a run
17 sheet. It doesn't look like a report that we usually
18 get even from an outside lab.

19 Q. So is it correct to say that you asked for the
20 tests for the decongestant?

21 A. It looks like I did, yes.

22 Q. And there seems to be a response to it, but
23 not in any form that's recognizable to you. Is that
24 correct?

25 A. Right. So I -- I'd have to look at that form

1 and try to decipher what -- you know, what it's saying,
2 because it sure doesn't look like our regular reports,
3 which is what we put on the autopsy report toxicology.
4 That's what we usually get back from the lab. You can
5 see here, and I've already talked about it on the
6 lidocaine.

7 Q. Yes.

8 THE COURT: Do you want to take about 10
9 minutes and you can show her what you have and --

10 MS. KIRKWOOD: Yeah.

11 THE COURT: -- go through that?

12 MS. KIRKWOOD: I'm happy to show her what
13 I have.

14 THE COURT: Let's take a 10-minute
15 recess.

16 MS. KIRKWOOD: Just fine. Yeah.

17 MR. MURPHY: Your Honor, can I -- I want
18 to talk about time just for a second.

19 MS. KIRKWOOD: We've got another witness.
20 Well, I need --

21 THE COURT: Just a minute.

22 MS. KIRKWOOD: Oh, I'm sorry.

23 THE COURT: He wants to talk about time.
24 Off the record.

25 (Recess taken)

1 (Open court, Defendant and Counsel
2 present, no jury)

3 THE COURT: Okay. All right. You may
4 continue questions. You've got about 20 minutes.

5 MS. KIRKWOOD: Okay.

6 Q. (BY MS. KIRKWOOD) I note that you're aware of
7 the short fall controversy, and you say in here that you
8 do not agree with Dr. Plunkett's analysis -- or papers
9 on short falls. Is that correct?

10 A. That's correct.

11 Q. Okay. And there are also a number of other
12 biomechanical papers including a paper by Plunkett and
13 Goldsmith, who's a biomechanical engineer at the
14 University of California Berkeley. Do you disagree with
15 that paper also?

16 A. If he's saying a short fall, yes.

17 Q. Okay. Are you saying that short falls can
18 never cause injury or death -- or serious injury or
19 death?

20 A. Rarely. It -- it would have to be extremely
21 rarely, because most of the time it's the person is
22 alone with the kid, they say they had a short fall and
23 we see all kinds of stuff. It's usually the same story;
24 rolled off the sofa, rolled off the bed. And I don't
25 believe rolling off a sofa or bed is going to kill

1 somebody.

2 Q. Okay. And you're aware of the biomechanical
3 research indicating that the force from even a short
4 fall like a 1-foot fall is far greater than the force
5 from shaking. Is that right?

6 A. I'm not -- I'm not familiar with the shaking
7 versus the fall --

8 Q. Okay.

9 A. -- what the -- what the numbers are on that.

10 Q. Okay. Well, let me ask you on the -- the --
11 do you think this is a shaken baby case?

12 A. No.

13 Q. Okay. And do you -- are you a believer in
14 shaken baby syndrome?

15 A. No. I -- I never use the term.

16 Q. Okay.

17 A. We use multiple blunt force injuries or
18 cranial cerebral trauma. And this isn't truly shaken,
19 because we have impact points.

20 Q. Okay. So this isn't a shaken baby case and
21 you are not a -- let me ask you, are you aware -- I'm
22 sure you're aware of the NAME 2006 position paper -- the
23 2001, I'm sorry, the NAME 2001 position paper. You were
24 very active in NAME at the time.

25 A. Uh-huh.

1 Q. And that -- did you support that paper at the
2 time?

3 A. Yes.

4 Q. Okay. And were you aware that it did not pass
5 peer review?

6 A. That's what we were told. I was president of
7 NAME -- or I guess I was vice president of NAME then.

8 Q. Yes.

9 A. And Dr. DiMaio decided to put that little
10 blurb on the position paper even though the board of
11 directors, the position paper committee hadn't approved
12 it. We don't know who -- he's reviewed it, but he was
13 told not to do that again, and he hasn't done it since.

14 Q. Are you familiar with Dr. Smilack in Maryland?

15 A. Smilack.

16 Q. Smilack, thank you. Yes. You are.

17 A. Yeah, he passed away several years ago.

18 Q. He did. Was he a good pathologist?

19 A. Yes.

20 Q. Would it surprise you to know that he was one
21 of the peer reviewers who said that the paper should not
22 be published for lack of evidentiary support?

23 A. Well, if that's his opinion. I do respect
24 him.

25 Q. Yes. Okay. And are you aware that the --

1 that the 2001 NAME position paper was withdrawn in
2 October 2006?

3 A. I don't know if it was really withdrawn. I
4 don't think they've updated it. It's usually five
5 years.

6 Q. Yes. And --

7 A. I think they're behind.

8 Q. And were you aware that they had done an
9 extension from 2003 to 2008?

10 A. I'm not on the board anymore, but if that's
11 what they're doing --

12 Q. Okay.

13 A. -- then that's -- yeah.

14 Q. And then -- and then were you aware when it
15 was -- that was the reason it had to be withdrawn. Were
16 you aware that it was withdrawn in October of 2006?

17 A. No, I wasn't.

18 Q. Okay. When did you become aware?

19 A. Well, you just told me it was withdrawn. I --
20 I didn't realize it was withdrawn. I -- I like the
21 paper.

22 Q. Okay. So you would still support the paper?

23 A. Yes.

24 Q. Okay. Well, I can -- for interest, if you
25 like, I can provide the materials if you'd like.

1 Okay. Do you recall my asking you for a
2 slide key to the autopsy slides?

3 A. Yes.

4 Q. And do you recall that you -- you --

5 A. We didn't have a key at that time.

6 Q. You didn't have a key. Okay.

7 A. No.

8 Q. Okay.

9 A. We do now, but back then we didn't make a key.

10 Q. Okay. I think everything -- well, it was a
11 little -- it was a little hard to identify the tissue
12 slide. Is it correct -- well, maybe we do need to
13 identify the tissue slides. Have you now identified the
14 sections of the body from which the tissue slides were
15 taken?

16 A. I don't have the slides with me. I think
17 Dr. Wilson -- I think he's identified them.

18 Q. No, his -- in his report he said he couldn't
19 identify the tissue slides. Do you have any information
20 that could help us identify where they came from?

21 A. Well, you -- you look at the slide and see if
22 it's lung or whatever. We just -- you know --

23 Q. Okay.

24 A. -- you just -- you know, you just have to look
25 at it like that. We don't even have block numbers, I

1 don't think, back then in 2000.

2 Q. I'm sorry. I said tissue in the layman sense.
3 Skin. The skin slides. The rest can be identified.
4 Everybody knows what they are, but it's -- do you have
5 any --

6 A. It would be that subscalpular area. That's
7 what you're talking about.

8 Q. The abrasion to the back of the head?

9 A. Yes. Uh-huh. Not the abrasion.

10 Q. Or the subgaleal under the abrasion?

11 A. Right. Right.

12 Q. Yeah. Yeah. I'm just -- sorry -- referring
13 to the area.

14 Okay. And you say here in your view the
15 fractured -- the old fractured clavicle has nothing to
16 do with Isis' death. Is that correct?

17 A. That's correct.

18 Q. Were you aware that there was a positive test
19 for CMV?

20 A. Yes.

21 Q. Would you agree that there is considerable
22 controversy in the area of pediatric head trauma at the
23 present time?

24 A. Yes.

25 Q. And did that controversy go back over the past

1 decade?

2 A. I would say probably, yes.

3 Q. Okay. And have -- have some of the theories
4 that were proposed and viewed as almost laughable 10
5 years ago now become part of the mainstream?

6 A. Can you give me an example?

7 Q. Okay. Well, I note that you don't agree with
8 Dr. Plunkett's short fall, and -- and he does agree
9 they're rare, of course, but is Dr. Plunkett now closer
10 to the mainstream than he was in 2000?

11 A. No.

12 Q. No? How about Mark Dias?

13 A. I'm not sure who that is.

14 Q. There are various abusive head trauma or
15 shaken baby conferences around the country. Are you
16 aware of those?

17 A. Yes.

18 Q. Okay. Are you aware of the Penn State Hershey
19 International Conference on Pediatric Head Trauma that
20 they hold every two years, I believe?

21 A. No.

22 Q. Okay. Do you know Dr. Vinchon from France on
23 the --

24 A. No.

25 Q. -- on the CAT scans?

1 A. No.

2 Q. No? And how about Professor Patrick Barnes at
3 Stanford?

4 A. I don't know him.

5 Q. Is it fair to say that the controversy -- that
6 those on both sides of the controversy come from
7 respected academic institutions?

8 A. I believe so.

9 Q. Okay. So that it is a true forensic
10 controversy as opposed to a friend view versus a
11 majority view. Is that correct?

12 A. Well, it's -- it's a controversy, yes.

13 Q. Well, do you know on which side of the
14 controversy Stanford University would fall?

15 A. No.

16 Q. Okay. Is Stanford University reputable? A
17 reputable organization?

18 A. As far as I know.

19 Q. Okay. Did you meet Dr. Waney Squier?

20 A. I saw her just walking in.

21 Q. Okay. From Oxford University and -- and also
22 a reputable institution --

23 A. Yes.

24 Q. -- in the medical field?

25 But we also have on the other side people

1 from reputable organizations with contrary views. Would
2 that be correct?

3 A. Yes.

4 Q. Okay. Did you say that you are a believer in
5 shaken baby syndrome or that you are not a believer or
6 are you somewhere in between?

7 A. I think it's extremely rare if it occurs. You
8 usually see an impact point.

9 Q. I see. But you also generally see neck
10 injury?

11 A. You can see neck injury, yes.

12 Q. Okay. Do you believe that there is a research
13 basis for shaken baby syndrome?

14 A. What do you mean by that?

15 Q. An evidence-based research. An
16 evidence-based.

17 A. Well, we can't, you know, take little babies
18 and shake them or throw them against walls. So -- you
19 can't do an experiment with a baby. Plus babies are all
20 different.

21 Q. Okay. We ran through some of the alternative
22 causes for the medical findings that have traditionally
23 been associated with abusive head trauma, which include
24 subdural hemorrhages, retinal hemorrhages, brain
25 swelling, things of that nature, and I know that you

1 believe this case is different, but would you agree that
2 in general, the list of differential diagnoses has
3 expanded tremendously over the past decade?

4 A. I think it has.

5 Q. Okay. So it wouldn't surprise you to find a
6 number of doctors who are looking at this broad range of
7 alternative diagnoses in specific cases, including this
8 case?

9 A. No.

10 Q. Okay. Have you read Professor Barnes' report
11 on this case?

12 A. Is -- let's see. Is he the radiologist?

13 Q. He's radio -- he's a pediatric -- he's the
14 chief of pediatric neuroradiology at Stanford.

15 A. I glossed over it, because -- he's a
16 radiologist. I'm not a radiologist, so -- you know,
17 I've found in my experience, radiology isn't --
18 sometimes not that good.

19 Q. Okay. He suggests another -- a number of
20 explanations for the medical findings other than blunt
21 force trauma.

22 A. That's his opinion.

23 Q. Yes. Okay. Would you be willing to take a
24 look at that report and see whether any of those might
25 fit?

1 A. I can look at it.

2 Q. Okay. But -- but you would agree that he is a
3 reputable -- or at least he is a chief of pediatric
4 neuroradiology at a reputable institution and children's
5 hospital?

6 A. That's all I can say. I don't know him. I
7 don't know anything about him.

8 Q. Okay. We talk about the -- there's been some
9 discussion of the pneumonia, and is it correct that you
10 believe that this is a ventilator pneumonia?

11 A. Yes.

12 Q. And is this -- do you often see pneumonia --
13 the type of pneumonia shown on the slides in patients
14 who have been ventilated?

15 A. Yes.

16 Q. This was not particularly different than any
17 other ventilator pneumonia that you have seen?

18 A. That's correct.

19 Q. And I think I asked you earlier, if you have
20 any articles on the time frame or types of pneumonia,
21 I'd appreciate them.

22 Did you take a -- did you have any reports
23 of melena when you did the autopsy?

24 A. Of -- of what?

25 Q. Of melena, of black stool. Were you aware

1 that the child had black stool?

2 A. I don't -- I don't remember. It's been so
3 many years.

4 Q. Okay. If you had a report of a child with
5 black stool, would you typically take slides from the GI
6 tract?

7 A. If I saw something that needed to be -- you
8 know, if I saw an ulcer or something, or had, you know,
9 a -- some defect, yes.

10 Q. Would you take them simply because you had
11 confirmed reports of GI bleeding -- or melena?

12 A. Well, if I didn't see it, I wouldn't take the
13 slide.

14 Q. Yes. Did you examine the entire GI tract?

15 A. I cut open from the esophagus down to the
16 stomach to the first part of the duodenum. That's kind
17 of one block, like I talked about. Then we take the
18 rest out, and so then I take a segment about like this
19 of small intestine, you cut, put it in there, and I can
20 examine the stool. But I did not open it, you know, the
21 entire thing. So I took large intestine and small
22 intestine.

23 Q. And what did you find in them?

24 A. It was unremarkable.

25 Q. Okay. And did you take -- did you take any

1 slides of that area?

2 A. No.

3 Q. Might you have taken them if you knew that
4 there was a history of black stool?

5 A. Well, if I'd seen black stool, but I didn't --
6 you know, it looked unremarkable to me.

7 Q. Yes. Could you have missed it by not looking
8 at the entire tract?

9 A. You see the fecal material coming out when you
10 cut the intestine.

11 Q. But if the child -- if the child had -- no
12 butts. If the child had a history of black stool that
13 was reported by the hospital as well as by the
14 caretakers, might you have wanted to take a closer look
15 at the GI tract to see if there might be abnormalities
16 there?

17 A. Well, to get a -- a stool that's black, it's
18 an upper GI bleed and I looked at that.

19 Q. Okay.

20 A. And the stomach itself doesn't have any blood
21 in it. It's got a little bit of bile-tinged fluid.

22 Q. Do you know how long it would take to repair
23 itself? And I don't know this area. I do know some of
24 the other areas better. If the child was on -- had had
25 the fresh frozen plasma and had been treated for the

1 coagulopathy, would the -- would you be able to see
2 the -- the abnormalities at autopsy?

3 A. I think I would be if it's that -- got that
4 much, quote, black stool in there. You ought to see
5 something besides normal stomach mucosa.

6 Q. Well, would you know whether -- after the
7 coagulopathy had been corrected by the fresh frozen
8 plasma and other treatments, would the child still be
9 having black stool? Or do you know?

10 A. I have no idea.

11 Q. Okay. About three minutes left. Let's see if
12 there's anything I would really like to ask.

13 Are you familiar with Dr. Geddes' research
14 on the neuropathology of the brain?

15 A. I've heard of it. I can't quote it right now.

16 Q. Okay.

17 A. I've heard the name.

18 Q. Okay. And Barnes and Krasnokutsky Imaging of
19 the Central Nervous System in Suspected or Alleged
20 Nonaccidental Injury, Including the Mimics, are you
21 familiar with that piece?

22 A. No.

23 Q. Okay. Let's talk about staph infections for
24 a -- for a minute. How would you determine if there had
25 been a staph infection at autopsy, particularly if it

1 had been cleared by antibiotics? Or could you tell?

2 A. If it's cleared by antibiotics you probably
3 wouldn't see anything.

4 Q. Okay. And assuming that my understanding of
5 pseudoephedrine and dextromethorphan is correct and the
6 mechanism of death is cardiac arrhythmia, is that
7 something that can be detected at autopsy?

8 A. You can't see cardiac arrhythmia at autopsy.

9 Q. So the child would simply die and you would be
10 left with no explanation other than the toxicology and
11 that --

12 A. Yes. But again, you can't just single that
13 out. You've got all these other factors, the blunt
14 force injuries. If we had a child that had, you know,
15 those -- you know, super high or something of that
16 medication, that could be a possibility, but you
17 couldn't say specifically. Probably be undetermined.

18 Q. Yes. Yes. And -- and that -- do you -- do
19 you have difficult cases in which we have basically a
20 combination of factors rather than a single factor
21 for -- for a death?

22 A. A lot of times those are undetermined --
23 undetermined deaths.

24 Q. Yes. Yes. And that -- if a hematologist or a
25 pediatrician were to tell you that the lab reports in

1 this child confirmed that she had a preexisting illness,
2 possibly of some severity, or a preexisting disorder of
3 some severity, and she was taking these medications that
4 were inappropriate and -- and have been found to be
5 consistent with infant death and that the labs
6 further -- or that the clinical history and so on -- not
7 just the clinical history, but the hospital records
8 confirmed dehydration, would those put together and
9 the -- plus the coagulopathy, would those put together
10 cause you to reconsider the cause --

11 A. No.

12 Q. -- and manner of death?

13 A. No.

14 Q. No. And that it is your belief that the
15 bleeding that you saw has no differential diagnosis. Is
16 that correct?

17 A. It's blunt force injuries. That's my opinion.

18 Q. And the -- the only differential -- there is
19 no differential diagnosis?

20 A. That is correct.

21 Q. There is only one diagnosis?

22 A. That's my opinion.

23 Q. And would others disagree with you? Would
24 that be fair to say?

25 A. That's fair to say.

1 Q. Okay. So that if the child went to a medical
2 examiner's office that, say, fell into -- I'm going to
3 call it the other camps. So the camps, thank heavens,
4 are beginning to converge. If they went to another
5 medical examiner's office or Stanford University or
6 someplace like that that had different views, the cause
7 of death would come out differently. Is that correct?

8 A. I can't speak for them. I don't know.

9 Q. Okay. Is that quite possible, given the
10 controversies in this field?

11 A. This case is pretty classic for blunt force
12 injury.

13 Q. Okay. But is it quite possible that --

14 A. Well, anything's possible.

15 Q. Okay. One -- well, the shaken baby syndrome
16 you said -- and I'm sorry. This is the third time. I'm
17 sorry. I think you said that shaken baby syndrome --

18 THE COURT: If it's the third time, then
19 it's repetitive --

20 MS. KIRKWOOD: It is. Okay.

21 THE COURT: -- and the record will
22 clearly state what's --

23 MS. KIRKWOOD: Okay.

24 THE COURT: -- previously been said about
25 it.

1 MS. KIRKWOOD: Okay.

2 Q. (BY MS. KIRKWOOD) I believe that you
3 attended -- or did you attend a conference at NIH,
4 Inflicted Childhood Neurotrauma in October of 2002?

5 A. Yes.

6 Q. And is it fair to say that the consensus at
7 that meeting was that there was a very limited research
8 basis on infected childhood neurotrauma and that much
9 more research needed to be done?

10 A. I believe so.

11 Q. Do you recall that in your contribution that
12 one of the things you pointed out was that a lot more
13 funding was needed for medical examiners' offices to
14 conduct thorough autopsies and evaluations?

15 A. I consider we do thorough autopsies --

16 Q. Yes.

17 A. -- but we can always use more money with
18 budget cuts.

19 Q. And is that still the case now?

20 A. We got a 10 percent cut, so -- all medical
21 examiners' offices throughout the country are getting
22 cut.

23 Q. Okay. Is it fair to say that if no tests were
24 run on this child -- I think you agreed she had a
25 coagulopathy, and is it fair to say that there were no

1 tests run to determine whether she had a genetic or
2 metabolic basis for that coagulopathy?

3 A. We didn't run anything.

4 MS. KIRKWOOD: Okay.

5 REDIRECT EXAMINATION

6 BY MR. BASKETT:

7 Q. Dr. McClain, with all these new differential
8 diagnoses that have come about and all this new
9 information that's come in, does that change your
10 opinion about what happened in this case?

11 A. No.

12 Q. If you were doing this autopsy today, what --
13 what would be your -- what would be the cause of death?

14 A. Multiple blunt force injuries.

15 Q. From what? What's the manner of death?

16 A. Homicide.

17 Q. With all these new theories and diagnoses and
18 differential diagnoses out there, is that still true?

19 A. Yes.

20 Q. Does it change your opinion at all?

21 A. No.

22 Q. If -- does staph infection cause blunt force
23 trauma to the vagina?

24 A. No.

25 Q. Does pseudoephedrine, dextromethorphan cause

1 blunt force trauma to the vagina?

2 A. No.

3 Q. Does some of these other -- all these other
4 differential diagnoses that have been mentioned -- I'll
5 mention a couple three of them here -- sickle cell
6 anemia, does that cause blunt force trauma?

7 A. No.

8 Q. Okay. Does Vitamin C and D deficiencies cause
9 blunt force trauma to the vaginal area?

10 A. No.

11 Q. Does these hemologic disorders and clotting
12 disorders, do they cause blunt force trauma?

13 A. No.

14 Q. Does meningitis cause blunt force trauma?

15 A. No.

16 Q. What's a discrete -- discrete impact point?

17 A. Well, you can see where, you know, the -- the
18 hemorrhage is. That's where the impact occurred.

19 Q. When you cut the organs up and section them,
20 do you look for disease or injury?

21 A. Yes.

22 Q. Did you find any disease or injury that
23 concerned you in this case?

24 A. The only disease I found was some pneumonia.

25 Q. Okay. Why did they -- what do they do with

1 the spleen when they harvest the spleen? What's that
2 used for?

3 A. The spleen's used for typing for the
4 transplant. They usually -- the transplant people use
5 it.

6 Q. Have you seen information that the child that
7 received the liver of Isis Vas was still alive in 2008?

8 A. Yes. They were.

9 Q. Did you see any injury or disease process in
10 the stomach, intestines, heart or kidney that cause you
11 any concern about the cause of death being a homicide
12 and it being the result of blunt force trauma?

13 A. No.

14 Q. Does shaken baby syndrome in your mind
15 impact -- regardless of all the theories, does it impact
16 this case at all?

17 A. No.

18 Q. And that's because of why?

19 A. I'm not calling it shaken baby. It's got
20 obvious impact points.

21 Q. Okay. I'm going to show you State's Exhibit
22 159 right quick. Has this got the unique identifying
23 number for Isis Vas?

24 A. Yes.

25 Q. Is this a document that you created?

1 A. Yes, it's a diagram.

2 Q. Okay. Let me give you a copy to work off of.
3 I'm going to show this copy to Defense counsel and her
4 expert. I'll just give you a copy of it.

5 MR. BASKETT: At this time the State
6 would offer State's Exhibit Number 159, Your Honor.

7 THE COURT: Any objection?

8 MS. KIRKWOOD: No objection.

9 THE COURT: 159 is admitted.

10 Q. (BY MR. BASKETT) What does that document show
11 that you created during part of your autopsy of Isis
12 Charm Vas?

13 A. It's the diagram showing the general region of
14 the laceration and contusion in the genital region,
15 anogenital region.

16 Q. Are your autopsy findings consistent with
17 Mr. Lopez' statements that he shook and hit -- he could
18 have -- shook and hit the baby so hard he could have
19 caused the baby's death?

20 A. Yes.

21 MR. BASKETT: Pass the witness.

22 RE CROSS-EXAMINATION

23 BY MS. KIRKWOOD:

24 Q. Okay. Are you aware that the statements to
25 which you've referred are contained in a polygraph

1 report?

2 A. Which statements?

3 Q. The statements that he shook the baby so hard,
4 or whatever, that he could have caused the baby's death?

5 A. I'm unaware. I just saw the redacted
6 statement. I don't know about any polygraph.

7 Q. So do you know anything about the credibility
8 of the person who -- who is stating that Mr. Lopez made
9 those admissions?

10 A. I don't know the man.

11 Q. Okay. So you have no opinion?

12 A. I have no opinion.

13 Q. Okay. And in the vaginal area, let's talk
14 about -- just very briefly for a minute, what do you
15 think might have caused the blunt force injuries? And
16 let's take the anal area first. What do you think might
17 have caused that?

18 A. Maybe a finger.

19 Q. Okay. And -- and what about the -- the
20 half-inch laceration in the vaginal area?

21 A. A finger.

22 Q. Okay. Do you think it's possible for an adult
23 male penis to have caused this?

24 A. No.

25 Q. How about a fist?

1 A. No.

2 Q. No. Okay. And we're talking about a finger.

3 And there's also been an issue of cleaning. Several
4 people have said they cleaned between the crevices in --
5 in this child. Do you view that as appropriate if there
6 was stool in the area?

7 A. Well, you would clean, but you're not going to
8 rip the tissue.

9 Q. Okay. Okay. But it is appropriate to clean
10 in that area if there's stool in it?

11 A. I would think, yes.

12 Q. Okay. Now, once you saw this laceration, did
13 you take any slides of the laceration?

14 A. Well, I took the -- the slide you've seen.

15 Q. Okay. And -- and are you aware that those
16 that have reviewed it, including the State's witnesses,
17 do not find signs of a laceration on that slide?

18 A. Okay. Well, it's in the picture.

19 Q. Okay. And you already described it in -- in
20 that -- the location in the picture, and there was no --
21 there was no further histology done, just the one slide.
22 Is that right?

23 A. That's correct.

24 Q. And you didn't do any dissection --

25 A. That's correct.

1 Q. -- of that area?

2 So this was a visual determination. Is
3 that right? Naked eye determination?

4 A. Yes.

5 Q. Okay.

6 MS. KIRKWOOD: Okay. That's it. Thank
7 you.

8 FURTHER DIRECT EXAMINATION

9 BY MR. BASKETT:

10 Q. Was -- the naked eye observation, was it
11 confirmed? Did you see it?

12 A. Yes.

13 Q. Did you document, take a picture of it?

14 A. Yes.

15 Q. Okay.

16 THE COURT: Better look at the time.

17 MS. KIRKWOOD: Yes.

18 MR. BASKETT: Okay. We'll pass the
19 witness, Your Honor.

20 THE COURT: Okay.

21 MS. KIRKWOOD: Thank you.

22 THE COURT: You may step down.

23 MS. KIRKWOOD: Okay.

24 THE WITNESS: Thank you.

25 THE COURT: Okay. Can y'all approach the

1 bench, please?

2 (At the bench, off the record)

3 (Open court, Defendant and Counsel
4 present, no jury)

5 THE COURT: Okay. We're in recess till
6 9:00 a.m. tomorrow, which is a Saturday, so we'll see
7 you-all in the morning.

8 MS. KIRKWOOD: Thank you.

9 (Evening recess)

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1 REPORTER'S CERTIFICATE

2 THE STATE OF TEXAS)
3 COUNTY OF POTTER)

4 I, Jodi D. Goodman, CSR, RPR, CRR, Official Court
5 Reporter in and for the 181st District Court of Potter
6 County, State of Texas, do hereby certify that the above
7 and foregoing contains a true and correct transcription
8 of all portions of evidence and other proceedings
9 requested in writing by counsel for the parties to be
10 included in this volume of the Reporter's Record, in the
11 above-styled and numbered cause, all of which occurred
12 in open court or in chambers and were reported by me.

13 I further certify that this Reporter's Record of
14 the proceedings truly and correctly reflects the
15 exhibits, if any, admitted by the respective parties.

16
17 WITNESS MY OFFICIAL HAND this the 15th day of
18 January, 2010.

19
20 Jodi D. Goodman, CSR, RPR, CRR
21 Texas CSR No. 7033
22 Expiration Date: 12-31-2011
23 Official Court Reporter
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